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A Review of the Hardware, Iron and Metal Trades.

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Vertical Rolls for Bending Boiler Plate.

We show in the accompanying illustration, for which we are indebted to Engineering, the vertical rolls for bending boiler plate used at Palmer's Shipbuilding and plate used at Faimer's Shipbuilding and fron Company's Works at Jarrow-on-Tyne. The use of these vertical rolls suggested itself at Jarrow at a time when the firm had under consideration the question whether they should weld their boiler plates or (being manufacturers of their own iron) should roll them as long as possible. In dealing with excessively long plates by the ordinary bending rolls a difficulty was experienced bending rolls a difficulty was experienced from the necessity of supporting the plates, and it was then suggested by their Mr. Gibbs that vertical rolls should be employed, such rolls enabling the plates to rest on their edges on the ground during the process of bending, and thus simplifying the whole operation. In accordance with this suggestion, a set of vertical rolls was made for the Palmer Shipbuilding and Engineering Company by Messrs. Scriven, of Leeds, and these rolls have ever since been in uninterrupted operation. There are, as will be seen, three rolls, two of these being at a fixed distance apart, and geared together, while the position of the third roll is adjustable in the usual way, according to the degree of curvature given to the plate operated upon. The arrangement for adjusting the position of the third roll is clearly shown in our engraving. The roll is clearly shown in our engraving. The two fixed rolls are geared together, not only at their upper ends as shown, but also below the bed plate, which is level with the floor of the workshop. They are also geared below the floor level to a spur wheel on a short vertical shaft, which carries a bevel wheel at its upper end, this bevel wheel being geared into by a bevel pinion fixed on a continuation of the crank shaft of the small engine by which the machine is driven, this engine being fitted with reversing gear. In the case of the rolls at Jarrow this engine is not employed, the rolls being driven from the main line of shafting by open and crossed

In dealing with the enormous plates now used in marine boilers, the procedure at Jarrow is as follows: The plate having been planed on the edges and punched and the lap corners planed off, is moderately heated, and is then set in the rolls to a curve marked and is then set in the rolls to a curve marked on the floor of the shop, the arrangement of rolls enabling this to be done with great facility and exactness. As the sheet plates are thus prepared, one ring is placed above the other, and the whole bolted ready to be transferred to the drill, after which it is taken to pieces and sent to the boiler erections have the before the control to the co ing shop to be finally riveted together. I largely used. It is now the general practice at Jarrow to construct their marine boilers of ordinary size with two plates only in each of ordinary size with two plates only in each ring, and instead of making ordinary boilers three rings in length, they are now com-mencing to make them in two rings, the number of longitudinal butts being thus reduced to four instead of twelve, as formerly, while apart from the connections with the ends, there is but one circumferential seam. This is a most decided advance, but without the vertical arrangement of bending rolls it would be almost im-practicable to deal with the enormous plates which the improved system of construction necessitates. These vertical bending rolls are now being adopted in nearly all the large works making marine boilers, and the arrangement is such a useful one that the fact of its having originated at the Jarrow works

is well worth putting on record.

In going through this boiler shop the visitor has a good opportunity of seeing the size to which marine boilers are now attaining, there being in progress some double-ended boilers 16 feet 6 inches in diameter by 20 feet long, each ring being made of three plates only. These boilers are being made wholly of steel, and they are for a working pressure of 90 pounds per square inch; each boiler when finished will weigh no less than So tons, and the two boilers are expected to supply the steam required for indicating 3000-horse power.

SCIENTIFIC AND TECHNICAL.

A German-Herr Friedrich Lauterborn of Durlach-is bringing out AN IMPROVED METHOD OF MANUFACTURING

Hitherto the process of making that metal has been expensive, because sodium had to be employed in producing it. Herr Lauterborn proposes to extract the soluble fluoride of sodium from powdered cryolite by boiling it with water, and then to treat the residuum-fluor calcium-by mixing it with sulphide of calcium and exposing the mix-ture to a red heat. The result will be a mixture of sulphide of aluminium and fluor calcium. The aluminium is separated by the addition of iron and subsequent exposure to a red heat, the fluor calcium acting as a desired to shatter. The explosion of the flux. The reduction of sulphide of aluminium dynamite is effected by means of electricity,

AN IMPROVED HECTOGRAPH

has been made. The principle upon which the process depends is this, that a superficial the process depends is this, that a superficial tanning of the gelatine, in the gelatine-gly-cerine pad, makes the surface, wherever tanned or rendered insoluble, capable of taking fatty inks, while the rest of the surface rejects it. In practice, then, it is only necessary to have a perfectly level hectographic pad, to write the copy with ordinary nutgall ink, to which a little extra tannin and extract of logwood has been added, and to transfer the writing in the ordinary manner upon the hectographic surface. Wherever the writing appears the surface becomes tanned, and on now applying a roller with printer's ink, the written characters alone take the latter. The pad characters alone take the latter. The pad is to be inked after each impression. It is said that 300 to 400 sharp copies can be made upon dry paper. The only material necessary, besides the hectograph, is a slab or zinc plate for spreading out the printer's ink, a small printer's roller with handle, and a roll of wood or paper or rubber for pressing the proper pages that the printer's roller with the proper pages and the proper pages are the pages ing the paper against the pad.

MM. Cailletet and Hautefeuille, the two

eminent French scientists, have determined THE DENSITY OF LIQUID HYDROGEN, OYYGEN AND NITROGEN

AN IMPROVEMENT OF THE LEHMAN HOT-AIR ENGINE

which practically doubles its working power. The essential feature of the Lehman engine is in the difference of temperature produced at the opposite ends of the cylinder, an increase of cold at one end being quite as economical as an increase of heat at the other. In Messrs. Bailey's improved engine, by an ingenious alteration of the water paces at the cold end a more rapid condensation of the air has been effected, while a greater heating surface has been secured at

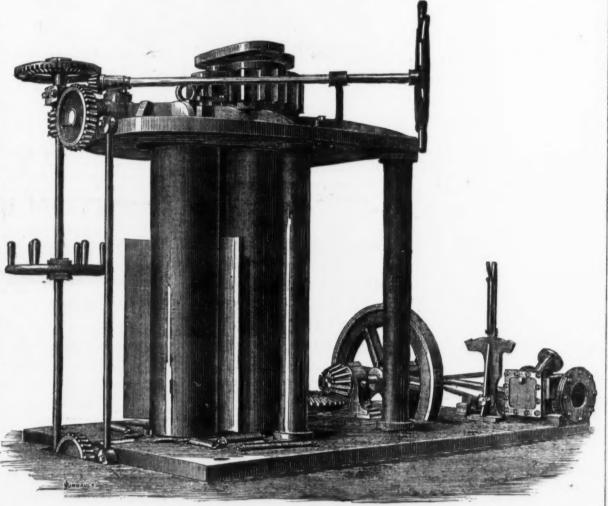
Early Iron Making on the Tyne.

Mr. I. Lowthian Bell gives the following sketch of the history of the iron industry on

The cheapness of fuel and the easy access to the Thames from the Tyne were the probable causes which induced Ambrose by liquefying these gases, mixed with car- Crowley, a citizen of London, to establish

some to remove. The Lauer system is calcuing about 11 cwt., whout classifying them lated to effect a saving of fully 40 per cent. as compared with the old system.

It is stated that Messrs. W. H. Bailey & the year 1812. The late Mr. Clayton Atkinson gave the particulars of the cost of manufacture in the year 1812. son gave the particulars of the cost of man-ufacture in the year 1812, which amounted to 105/6 per ton. Nearly 2½ tons of coke were used in the operation, equal, all included, to about 5 tons of raw coal, with a make of 49 tons per week from one furnace. Small rolling mills were erected at Lemingsmall rolling fillis were erected at Lemington, and by Hawks & Co., at Gateshead, for working up old scrap iron, and larger works were afterward built by Losh Wilson & Bell, in 1827, at Walker, where the proces of puddling iron was first practiced on the banks of the Tyne. Probably no manu-facture has, during the last 50 years, made greater advance in the direction of economy than has the iron trade. Previous to the introduction of the hot blast, and partly owing to a very wasteful mode of coking, as much as 10 tons of coal was occasionally censumed in Scotland for the production of a ton of pig iron. Thirty years ago, when the first blast furnaces were built at Mid-dlesbrough, this rate of consumption had been reduced to about 4 tons. After the lapse of a dozen years, by a great increase in the capacity of their furnaces, by the use of more highly heated air than that hitherto employed, and by the application



VERTICAL BOILER PLATE BENDING ROLLS.

bonic anhydride and with nitrous oxide, and basing their calculations on the assumption that the mixed liquids are without action on one another. The density of liquid oxygen at — 23 degrees (pressure = 100 months) in 1690 at Winlaton, near this of the furnace gases to the steam boilers town, where different articles, including and to the hot blast stoves, the north counnail rods made by the slitting mill, were try ironmasters had further reduced this manufactured. Iron was a very much to something under two tons of coal, while scarcer metal for long after the days of the make per furnace had been increased and oxygen at -23 degrees (pressure = scarcer metal for long after the days of conditions of the days of some experiments with carbonic anhydride, and o.4 from experiments with nitrous oxide; at o degrees the numbers obtained were 0.58 and 0.65 respectively. Liquid nitrogen at much as a modern Middlesborough furnace —23 degrees gave numbers corresponding with the density 0.44, while at o degrees the density was 0.37. The density of liquid hydrogen was 0.033 at —23 degrees, and 0.025 at 0 degrees. Dividing the atomic weights of the three elements by the densities at—
23 degrees, the atomic volume of oxygen is found to be 17; of nitrogen, 31.8, and of

has been testing

A NEW METHOD FOR BLASTING ROCKS UNDER

WATER, at Krems, on the Danube. The chief feature of Lauer's system is to employ a hollow cylinder, like a gas pipe, and to place the dynamite cartridge, not as hitherto in a hole bored into the rock to be blasted, but in the

rial for the Winlaton Works, founded in 1690. Before the early part of the eighteenth century every morsel of iron used in the arts was drawn under the hammer. To hydrogen, 30.3. the arts was drawn under the hammer. To Major Lauer, of the Austrian Engineers, vention at that time of rolling iron plates by means of cylinders. This idea remained means of cylinders. This idea remained without further application until 1783, when Cort patented the rolling of bars by the means suggested by Hanbury. For a long time, however, the process was confined to making flat or square bars; indeed, Mr. Jos. Laycock, of Gosforth, remembers in his youth men working many a long day in forging cylinder in question. The cartridge only touches the surface of the rock which it is desired to shatter. The explosion of the members the late William Longridge into a red heat, the fluor calcular acting as a given for receiving Swedish from and for approach of the flux. The reduction of sulphide of aluminium dynamite is effected by means of electricity, forming him of the elation of his firm at dynamite is effected by means of electricity, forming him of the elation of his firm at dynamite is effected by means of electricity, forming him of the elation of his firm at dynamite is effected by means of electricity, forming him of the elation of his firm at the used until now for the manufacture of the metal, because the preparation of sulphide of aluminium required the action of sulphide of aluminium required the action of sulphide of carbon upon pure alumina—a bisulphide of carbon upon pure alumina—a fedicus and costly operation.

It is stated that by an entirely new process.

The reduction of sulphide of aluminium dynamite is effected by means of electricity, forming him of the elation of his firm at the products, Newcastle never to name a reasonable price, they refuse to one the participle, they are already out a boiler plate weighing 3 cwt., so small that a fair stream is able to wash them away without help, whereas in the case of gunpowder the rock is only split up into blocks more or less large and trouble—from the products, Newcastle never to name a reasonable price, they refuse to name a reasonable price, they refuse to name the exporting the products, Newcastle never to name a reasonable price, they exporting the products, Newcastle never to name the products, Newcastle never to part the products, Newcastle never to name a reasonable price, they content the usual cartridge in a hole bored in turning center. Nevertheless the house of Spencer has distinguished itself by the care to be. Price on account of the dation of his firm at the usual cartridge in the products, Newcastle never to part the products, Newcastle ne

from 140 to 500 tons per week. To a Middlesbrough firm, Messrs. Bolckow, Vaughan & Co., under the able guidance of Mr. E. Windsor Richards, the great iron industry of the present generation is indebted for its last act of amelioration. This observation refers of course to the successful application of the so-called basic ron, like that of Cleveland, is capable of being employed in the Bessemer converter. The rolling machinery of the firm just mentioned has kept pace with the other improvements referred to, for out of one rail mill driven by two pairs of reversing engines, the invention of Mr. John Ramsengines, the invention of Mr. John Rams-bottom, and representing a power of 8000 horses, above 3600 tons of rails, in lengths of 90 feet, have been produced in one week. The manufacture of steel appears to have been carried on in the vicinity of Newcastle for upward of 300 years, first, it is believed by some Germans who settled at Shotley Bridge toward the close of the seventeenth century. Notwithstanding the cheapness of coal and the convenience of Newcastle as a port for receiving Swedish iron and for

The Cable Steamer Paraday.

The cable steamer Faraday, which is now employed in laying the second Atlantic cable from Cornwall, England, westward, has on oard a thorough equipment for special work. A correspondent writes:

As you know, the Faraday, after the Great Eastern, is one of the largest vessels afloat, being 305 feet long, 52 feet beam and 30 feet deep. She is so deep, in fact, that whenever deep. She is so deep, in fact, that whenever she lies in the Thames they have to dig a cradle for her at Woolwich in the river bottom to float her. The wonderful speed with which she does her work is due to the perfection of her equipments. She is fitted up with electric lights of two patterns. Her deck is lighted with the new Siemens light, of the effects of which on the coean even tefore it had attained its present. ocean, even tefore it had attained its present perfection, Mr. Laurence Oliphant gave you such a striking description after his voyage home in the Faraday three years ago. Her main saloon is lighted with the Swann electric light. Thanks to this perfect illumination, the men on board can work night and day with equal ease, and such is the excellent adjustment of her machinery that it makes little difference to her what the weather may be or the rolling of the sea. She has three cable tanks—fore, aft and amidships—filling the whole width of the ship. These are of iron and are water tight, and they are so arranged that as fast as the cable is paid out water can be taken in as ballast to steady the ship. The cable is coiled into the bottom of the tanks from the inside to the outside It is paid out in reverse order from the outside to the inside. The bight of the cable is brought up through a kind of cage called a crinoline, passed over a revolving wheel, carried along down a shoot astern about 30 feet in length, and then passed between three sets of superposed wheels, which act either as drags to retard or spurs to accelerate the paying out of the cable, according to circumstances. Emerging from these, the cable is passed three times around an 8-foot drum, whence it goes to a dynamometer fixed about 30 feet further astern. From this it is carried over the stern of the vessel by a wheel so rigged as to pay the cable out at any angle. When the weather is very rough they take an extra bight in the cable from the drum and carry it forward about 100 feet through another triple set of wheels and another dynamometer. This prevents any sudden strain from snapping the cable. The drum acts as a brake and an automatic recorder, which gives the amount of strain on the cable as it passes over, and the strain can be so regulated as to secure a uniform slack not varying far from 5 per cent.

A recent communication to the French Academy of Sciences announces a new method of taking photographs in color, which, although it is not a solution of the which, although it is not a solution of the prime problem for photographers, how to produce nature in her own hues, is at least some mechanical approach to it. It is the invention of MM. Ch. Cros and J. Carpentier, and consists in taking three separate photographs of the red, yellow and blue tints, then combining them. Three negatives of the object are first taken, one through a screen of orange liquid, one through a screen of green liquid, and one through a screen of green liquid, and one through a screen of the varying opacities and transparencies of these negatives indicate the relative qualities of red. vellog and bins relative qualities of red, yellow and blue tints in the object. The proofs are taken on plates of glass, coated with coagulated albumen, which has imbibed bichromate of A transparent ammona. A transparent negative, or first photograph, is applied to one of these, and exposed for some minutes to a diffused light, so that the transparencies and opacities of the negative shall imprint themselves on the sensitive albumen. The proof plate is then plunged into a coloring bath, and in the parts protected by the opacities of the negative the coloring matter spreads and fixes itself. By repeating this pperation with the three different negatives the three colors are combined on one glass plate, and a fair imitation of the or object is the result. Of course, for the image obtained through the green screen the coloring bath is red, for that through the coloring bath is red, for that through the orange screen blue, and that through the violet screen yellow. The same screens and pigments serve to reproduce all sorts of polychromes. The screens hitherto used are glass vessels filled with solutions of chloride of cobalt, chromate of potash and sulphate of copper. When the electric light is used the screen is put before the lamp, so that the object will be illuminated by monochromatic light and photographed in the ordinary way.

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The Birmingham correspondent of the Engineer writes as follows: American buyers of hoops would seem to have made up their minds that English prices are likely to continue to rise. Some makers announce this week that they are in receipt of commu-nications from United States consumers offering to take the whole of their next year's output. But such offers meet with no acceptance. Although it is left with makers

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Hardware in New Zealand.

A special correspondent of the Ironmonger, writing from two points in New Zealand, gives some information about the competition of American and English hardware in that colony which will be of interest to many of our readers. Writing from Dunedin

he says:
"In New Zealand the double-furrow plows are preferred. The usual system is for large farmers (squatters) to employ their smaller namers (squatters) to employ their smaller neighbors, who do the work by contract at prices varying from 4.6 to 6/an acre. It is probable these prices will create some sur-prise in England. A man with three or four horses will plow per day two and a half to three acres. He does not make much by the operation, but it is better than keeping himself and his horses idle. Sulky plows are becoming popular in the colony; it is claimed for these that the work is more like director. digging. As the result of conversation with some of the leading importers of hardware I end you the following, which I give you in good faith and "without prejudice," as the good faith and "without prejudice," as the lawyers say: Putnam's horseshoe nails, packed in 25-pound boxes, have the market. The Stirchley Company have sent out sample shipments; of these the complaint is that they are clipped instead of forged, and therefore do not realize as hith a wice as Put fore do not realize as high a price as Put-nam's; in this part of the world hoofs are very hard in the summer, which nailmakers should bear in mind. Nettlefold's carriage and tire bolts are reported not yet up to American, but importers believe they soon will be. English pumps, it is stated, do not work so evenly as American, and are no cheaper. Wire nails come from the Contin-ent, and I am asked why. American lightnent, and I am asked why. American nguing hay-knives cut twice as fast as those of Sorby, Lyndon, or Tyzack, at about the same prices. Screw-wrenches, hitherto supplied by C. Johnson & Co., costing 4/3 dozen are superseded by those of A. C. Coes & Co at 1/10; at the same price it is believed the former would not be preferred. Bull holders from America, costing 4/7 dozen have taken the place of Messrs Timmins' make at 37/9. In brass goods Birmingham is almost su-preme: lamps formerly imported largely from United States are now procured from England, the burners being superior; but some importers are getting the heads from Birmingham and stands from America; the Birmingham and stands from America; the better styles being the more saleable. Gilpin's bits, nicely packed, suit the market and keep it. Hammers have been shown me of Stowe's make, costing 13/6, superior in style and finish to those of Atkins & Son at 17/. The trade for picks is returning to England, but axes, I need hardly mention, are supplied almost exclusively by Sharp and Collins. Messrs, Yates have sent out some. They are considered somewhat awkward, and do not meet with a ready sale. Importers who have read the letter of Messrs. Mawhood in your issue of February 19 are after their past experience, somewhat in-credulous. If English makers are really in a position to compete they would be wise to send out specimens with lowest prices. Par sead out specimens with lowes prices. Particular attention should be paid to the handles and to the packing. Disston's saws meet with a limited sale. Ames's shovel may be stated to monopolize the market; report says that English makers admit they cannot produce at the same prices. Where prices are given it may be considered that the American are recent, the English some time back. Being generally old stock, the prices are the cost here, including all charges into store. Iron and steel being cheaper in England than in America, how is it that in England than in America, how is it that in articles made from these metals the trade is so largely with the latter country? This is a question frequently asked. Under another cover I send you the prices current of a leading New York export firm for January and April. It will be observed there are considerable variations."

Whiting from Wellington, he save: "I Writing from Wellington, he says: "I have gone into the question of English and

American goods here again, and am told by the best houses in the trade that the actual state of affairs is about as appended: Electro-plated cruets—American, such as Reed & Barton's, at \$2.25 to \$4, are preferred. Axes, hatchets—American makes, say, Collins, Hunt, Sharp, Simmons, Weed, Hurd, &c., have the trade. Adzes, whether railcc., have the trade. Adzes, whether railroad, square-head, ship carpenters', spurhead, coopers', or otherwise—English makes have the preference, and, all things considered, are found the best. Picks for railway or mining uses—United States makers have the bulk of the business, except adze-eye cicks and mattocks, in which lines English firms, especially Messrs. Parkes, are regaining ground formerly lost. Shovels—American preferred, and have best sale. Spades—English sell most freely. Hoes—Trade runs about two-thirds English and one-third runs about two-thirds English and one-third American. Forks, rakes, &c.—All Ameri-can, some of the garden rakes being of steel. Scythes—Mostly English. Hammers and other carpenters' tools—Largely Eng-lish. Chisels (firmer)—Trade about equally divided. Augers—English, chiefly Messrs. Gilpin's, have the market. Braces and bits Gilpin's, have the market. Braces and bits
—Americans have quite out out the English.
Screw-drivers and drawing knives—English makes have the market, the American goods of these sorts being designated mere rubbish—Saws of all kinds—Disston's "Great American-tooth saw" sells best.
Rules—English; Messrs. Rabone's make have recovered the market. Levels—American are considered best. Try-squares, planes of all kinds—English goods have the market entirely. Grindstone hangings—All American. Saw sets—English (Winn's) have the market. Wrenches—American have the market. Wrenches—American preferred. Rim and mortise locks—Ameri-

Avery) preferred, and are now crowding out the Americans. Rifles-Mostly American, such as the Winchester."

Statistics of the American Iron Trade In 1880.

BY JAMES M. SWANK.

Concluded.

PRODUCTION OF IRON AND STEEL RAILS IN 1880.

The production of rails of all kinds in the United States in 1880 far surpassed that of any previous year. It reached the enormous quantity of 1,461,837 net tons, or 1,305,212 gross tons. This is 31 per cent. more than the production of the next most productive year, 1879, in which 1,113,273 net tons, or 993,993 gross tons, of iron and steel rails were made. The rail product of 1880 was composed of 954,460 net tons of Bessemer steel rails, 493,762 tons of iron rails, and steel rails, 493,762 tons of iron rails, and 13,615 tons of open-hearth steel rails. The total production of 1880 was 348,564 net tons more than that of 1879; that of Bessemer steel rails was 270,496 net tons, or 40 per cent., more; that of iron rails was 73,602 tons, or 18 per cent., more; and that of open-hearth steel rails was 4466 tons, or 49 per cent., more. The Bessemer steel rail production here given includes 36,868 net tons of rails rolled by iron rolling mills mainly from imported blooms. ing mills mainly from imported blooms.
The quantity of Bessemer steel rails rolled in 1880 by the Bessemer steel makers themselves was 917,592 net tons.
The production of street rails in 1880 is

included in the total production for the year, and amounted to 16,894 net tons, of which 8055 tons were Bessemer and open-hearth steel rails, and the remainder were iron rails. The production of street rails in the seven preceding years was as follows: 1873, 9430 net tons; 1874, 6739 tons, of which 1000 tons were Bessemer steel; 1875, 16,340 tons, of which 2308 tons were Bessemer steel; 1876, 13,086 tons, of which 3563 tons were Bessemer steel; 1877, 7015 tons, of which 1269 tons were Bessemer steel; 1878, 9229 tons, of which 1710 tons were Besse-mer and open-hearth steel; 1879, 8646 tons, of which 5813 tons were Bessemer and open-

hearth steel.

The production of iron and steel rails in this country since the beginning of the man-ufacture of Bessemer steel rails has been as follows, in net tons:

Years.	Open-Hearth Steel Rails.	Iron Rails,	Bessemer Steel Rails.	Total.
x867		450,558	2,550	462,10%
1868		499,489	7,325	506,714
1809		583,936	9,650	593.550
x870		586,000	34,900	620,000
1871		737,483	38,250	775,733
1872		905,930	94,070	1,000,000
1873		761,062	249,015	800,077
1374		584,460	144.944	720,413
1875		501,649	290,863	720,512
1876		467,108	413,461	870,620
1877		332,540	432,169	764,709
1878	9,397	322,890	550,398	882,685
1879	9,149	420,160	683,964	1,113,273
1889	13,615	493,762	954,460	1,461,837

Included in the column of iron rails are a few tons of crucible steel rails and steelheaded rails, which it has not been thought necessary to classify separately. No crucible rails have been made since 1874, and but a few tons in that or in any preceding year. The production of both the classes of rails mentioned was as follows in 1873 and 1874: 1873, 26,377 net tons; 1874, 17,181 tons. The production of steel headed rails in the last six years has been as follows: 1875, 19,last six years has been as follows: 1875, 19,-436 net tons; 1876, 12,791 tons; 1877, 5844 tons; 1878, 2288 tons; 1879, 9931 tons; 1880, 12,730 tons. The Elmira Iron and Steel Rolling Mill Company, at Elmira, N. Y., made all the steel headed rails that were made in 1879 and 1880, using "silicon tops."

Hon. Joseph Nimmo, Jr., Chief of the Bureau of Statistics, states that in the year which ended December 31, 1880, there were

which ended December 31, 1880, there were about 65,000 net tons of steel blooms imported into the United States. They were valued at \$1,708,100.

The production of 1880, large as it was, will be exceeded in 1881. Not only does the heavy demand for rails continue, but the

facilities for their manufacture are being largely increased. The new works of the Pittsburgh Bessemer Steel Company, Limed, at H March 79 of this year, are making rails.
The Bessemer steel works of the Colorado
Coal and Iron Company and the new steel
works of the North Chicago Rolling Mill works of the North Chicago Rolling Mill Company will probably manufacture rails before the close of the year. Nearly all of the other Bessemer steel works are increasing their capacity for the manufacture of rails, and the effect of their enlarged capacity will be noticeable before the year is over. Iron-rail mills were actively employed during the first half of the year, and in many cases were running on steel rails rolled from imported blooms, or from blooms furnished by domestic steel makers.

imported blooms, or from blooms furnished by domestic steel makers.

The following table will show approximately the consumption of rails in this country from 1867 to 1880, in net tons:

Years.	de in	Impo	rted.	rimate ump-
2 661.5	Mad	Iron.	Steel.	Appro cons tion,
1867	462,108	163.		625,157
1868	506,714		250,08x	
186g	59 1.586	313		900,740
1870	620,000	392		1,019,153
1871	775.733	500,		1,341,935
1872	1,000,000	381,004	149.786	1,330.850
1873	890,077	99.201	139.571	1,148,849
1874	729.413	7.790	100,515	837-724
1875	794,518	1,174	18,274	#xx,950
1876	879,529	287	none	879,910
1877	764.709	none	35	754,744
1878	882,685	none	10	652,195
1879	1,113,273	19,090	25,057	1,157,420
1880	V 461 827	122.450	1 x = 2 mm	A service for

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A new exposition building, now being erected at Milwaukee, Wis., has a frontage on Fifth street of 400 feet, and on State street of 203 feet. The hight of the main building is 80 feet, and of the dome 138 feet. The hight of landing above dome is 145 feet, and to the of coursely roof and feet. eptember I.

Beecher & Peck, of New Haven, are very busy on orders for drop presses and drop

mained in bonded warehouses at the close of mained in bonded warehouses at the close of 1880 no less than 39,912 net tons of iron rails and 38,379 net tons of steel rails, which should be deducted from the year's importa-tions in estimating the consumption of the year. At the close of 1879 there were only 1820 net tons of iron rails in bond, and no steel rails. Deducting the iron and steel rails in bond at the close of 1880, we find the consumption of rails for the year to have been about 1,674,235 net tons.

PRODUCTS OF FORGES AND BLOOMARIES IN

As we have heretofore explained, blooms As we have heresofter expanded, blooms and billets from ore are made chiefly in the Champlain district of New York, and blooms from pig and scrap iron are made chiefly in Pennsylvania. The make of each product in the last eight years is given pelow in net tons :

	Prod		
Years.	Blooms and billets from ore.	Blooms from pig and scrap iron.	Total
1873 1874 1875 1876 1877 1879 1889	32,863 30,450 24,416 26,784 24,227 24,139 30,282 40,652	29,701 25,222 24,827 23,844 23,073 25,906 32,071 33,937	6a,564 6x,670 49,243 44,628 47,300 50,045 62,353 74,589

THE IRON AND STEEL PRODUCTION OF ALLE-

GHENY COUNTY, PENNSYLVANIA.

The following table gives the production of iron and steel in Pittsburgh and the remainder of Allegheny County, Pennsylvania, in 1880 and the six preceding years, in net

Yea	r.	Number of iron roll- ing mills.	Product of fron rails.	bar, angle, bolt, rod and hoop.	Product of sheet and plate, except nail plate.	Product of nails—kegs of 100 pounds.	Total rolled iron, in-
1874 1875 1876 1877 1878 1879		31 31 31 31 32	171 189 208 226 286	,114 ,178 ,511 ,342 ,687 ,882 ,253	52,361 45,773 31,488 30,254 33,445 52,265 80,899	562,995 442,359 538,874 597,866 444,013 294,942 419,098	274,025 239,069 247,943 268,486 282,333 353,894 389,107
Year.	Number of blast furnaces.	Make of nie from	9 M	Number of steel works.	Make of crucible steel ingots.	Make of all other steel, including Bossemer ingote.	Total make of steel,
1874 1875 1876 1877 1878 1879	12	143, 131, 128, 141, 217, 267, 300,	856 555 749 299 315	11* 14* 14* 14* 18* 18*	17,915 22,942 25,009 24,747 27,866 40,142 52,136	6,000 x5.498 54.467 82,40x 106,948 x30,781 x69,8x9	23,915 38,440 79,476 107,148 134,814 170,983 281,955

RAND SUMMARY OF UNITED STATES STATISTICS FOR

1,818,906

1.397,015

roduction of pig iron in 1880, net tons.
Goduction of spiegeleisen in 1880 (included in pig iron), net tons.
Goduction of all rolled fron, including
nails and excluding rails, in 1880, net

1880, net tons... oduction of open-hearth steel rails in 1880, net tons... roduction of iron and all other rails in 1880, net tons.....otal production of rails in 1880, net

roduction of iron and steel street rails
in 1880 (included above), net tons...
roduction of cut nails and spikes in
1880, included in all rolled iron, kogs
of res pounds...
roduction of crucible steel ingots in

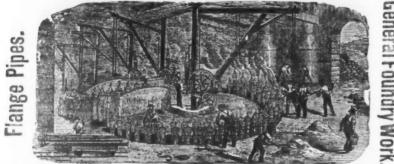
of all kinds of steel in 1880,

n 1880, gross tons.... ipments of iron ore in New Jersey in

and to top of cupola roof 202 feet. The area of the ground floor is 87,000 square feet. In style the building may be described as Queen Anne, combining the picturesque qualities of the Gothic with the practical features of the classic. The estimated cost is \$125,000, and the time of completion

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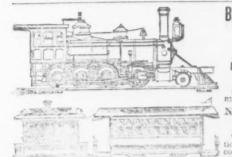
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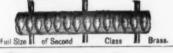
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The Latest Methods of Submarine Telegraph Work.*

This branch of engineering is of comparatively recent growth, and at first glance may seem hardly to be mechanical in its characteristics. The popular impression among those who devote any thought to it at all, is apt to be that it only involves the functions of the navigator and seaman. The real case is that only well-built and accurately working machinery, designed by the light of experience gained in all kinds of weather and over all varieties of ocean bed, writes successfully submarine telegraph work upon the list of engineering possibili-

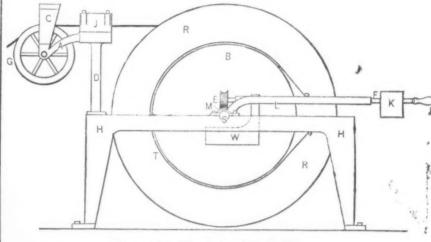


Fig. 1 .- Side View of Sounding Machine.

All these considerations may be condensed the weight of the wire paid out, and, as into a single postulate, viz.: The capitalist bodies following freely through water are knows that trade to a certain amount be-found to very nearly describe equal spaces

It is interesting to trace how entirely, for detaching the sinker when bottom was from the first step, the prosperous conduct touched, thus sparing the line the strain of of an enterprise of this nature depends upon lifting it to the surface, fail to overcome of an enterprise of this nature depends upon the perfection of the mechanical appliances this trouble; and the expedient of dispensemployed in it. For example, the construction and laying of a submarine telegraph the submarine telegraph the submarine telegraph to the surface by its own buoyancy, recording solution of which stimulates professional pride, and as a commercial question, depth) it has been subjected to by the amount of mercury forced from one comfication of the time, money and labor devoted to the undertaking. About the most an incompressible one—only introduced important factor in the financial success of another embarrassment, as the distance and voted to the undertaking. About the most important factor in the financial success of a submarine telegraph is its capacity for business, or, in other terms, the number of words it can transmit in a given time. This fixes its revenue-producing power. Statistics show very distinctly the ratio between the foreign commerce of a people and the extent of its telegraphic correspondence, and this is the source from which must come the fund that shall cover the cost of maintenance, pay interest on the original investment, provide for complete renewal in twelve or fifteen years at the farthest, and afford satisfactory dividends to stockholders. All these considerations may be condensed

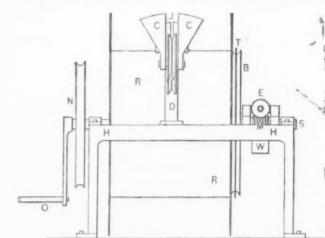


Fig. 2.-End View of Sounding Machine.

tween two countries means the interchange of so many words by telegraph, for which so turbed by any increase of weight from the much money will be paid.

The first duty of the engineer is to decide how great a capacity of transmission the submarine telegraph, more conveniently of the machine in question. They consist styled cable, may have. Rapidity of trans-

structive action of the surface on which it will lie. These essentials to the durability counterbalanced (see C) with the least possi will lie. These essentials to the durability being definitely decided, it becomes possible to indicate the largest insulated conductor which, in combination with the other constituents of a complete cable, the weight-carrying and storage capacity of the ships available for the work render permissible. The invention of the brake for balancing carrying and storage capacity of the ships available for the work render permissible. The capitalist then may judge what the prospects of commercial success are. To arrive at this stage resort must be had to copious and accurate deep sea sounding, and thus, at the threshold of the enterprize, the need of mechanical appliances is felt, and it is fully met by the apparatus of Sir William Thomson, Professor of Engineering of the University of Glasgow. This instrument, devised as the recreation of a yachting cruise, is so infinitely superior to anything else of the kind as to put them out of court entirely. It has been materially, in detail, for accurate adjustment, which is accom-

styled cable, may have. Rapidity of transmission means size; size means weight and bulk; these, in turn, imply ships of sufficient tonnage, and it becomes apparent that not a step in the enterprise can be safely taken until the proposed route be made the object of an exhaustive survey.

When the length of the longest uninterrupted circuit is known, and the greatest depth of water, the profile of the ocean bed and its chemical constitution along the projected course discovered, the engineer can predicate, with reasonable exactitude, how much shall be of a certain tensile resistance and how much of another, and whether or not any portion must be guarded from destructive action of the surface on which it The wheel is

cruise, is so infinitely superior to anything else of the kind as to put them out of court entirely. It has been materially, in detail, for accurate adjustment, which is accommingored by Lieut Cowder Jigsbee, of the United States Navy, but perhaps has reached its fullest development in the form built and used by the I. R. G. P. & Tel. Co.. of Longrey Paper by Mr. T. W. Rae, read before the American Society of Mechanical Engineers.

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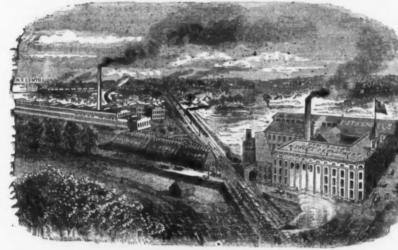
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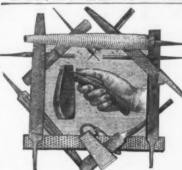


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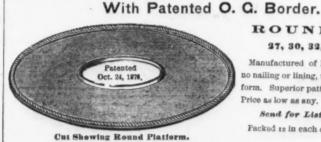
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the class prepared for piano makers on render this adjustment necessary. The traveling weight preserves this condition very exactly, as the friction of the sounding wire is practically nil, and the slightest line, and an empirical formula given by checking of the descent of the sinker Latimer, Clarke and Helming Jenkin rend-

which it leaves the vessel varies decidedly account of its exceptional tensile strength, is about 9 pounds per 100 fathoms when submerged, and the screw thread is cut and worm-wheel proportioned so as to cause the proper increase of brake leverage needed to proper increase of brake leverage needed to exactly balance the regular increment of weight. Another weight, K, may be observed at the extremity of the brake lever, also capable of adjustment like the traveling weight. This is to balance the constant weight of the sinker. The method of procedure is to place the traveling weight in a neutral position, and, allowing the sinker (a spindle of cast iron of about 30 pounds weight, with a large enough long passage spindle of cast iron of about 30 pounds weight, with a large enough long passage therein to allow of the specimen cup slipping through it when the sinker is detached) to depend from the reel and just submerged, to vary the fixed weight, K, until there is just preponderance enough to allow the reel to turn. The varying condition of the journals and lubrication of the machine render this adjustment necessary. The

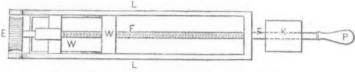


Fig. 3 .- Top View of Brake Lever Shown in Fig. 1.

instantly stops the reel. A counter record- ers it possible to calculate the angle it makes

In Sir William Thomson's original appar-atus the method of balancing the wire paid out by increasing the brake pressure was most elementary, being accomplished by hanging small weights of definite size upon the brake strap at regular intervals of time. There is nothing peculiar in the detaching device for the sinks on touching bottom, as device for the sinks on foliching bottom, as it has not varied materially from the days of Berryman and Brooke, the naval hydro-graphers, but a very effective and inexpen-sive specimen cup has been added, consisting of a cylinder with its upper end closed, with the exception of one or two small perfora-tions, and its lower covered with a diaphragm of rather stiff india rubber, slightly concave externally and crossed with two diametric cuts at right angles to each other. This perfectly meets the exigencies, which are to have a cup sufficiently mobile to open on touching soft ooze, and yet tight enough to prevent its contents being washed out in the ascent. The rapidity and accuracy of this apparatus which, in combination with the machine is illustrated by a series of soundings taken between Marseilles and Algiers of slack to be regulated much more accurin September, 1879. The final route was across these zigzags, which were made for the purpose of ascertaining the inclination of the bottom athwart, as well as along, the

tral in the Gulf of Lyons with no greater loss than about 7000 fathoms wire and some 25 sinkers and specimen cups. (It is neces-25 sinkers and specimen cup. (it is necessary to say at this point that very good authorities prefer to recover the sounding weights at each cast, and this was the practice on the occasion in question). Samples by a deck engine connected to the apparatus by a rope belt. By old methods this work would have occupied a fortnight, while pos-sessing none of the authority and precision of this. The method of preserving the sounding wire is to keep it in a bath of caustic soda, which preserves it bright and unoxidized for two or three years. Each reel of wire, containing 4000 or 5000 fathoms, is used for

From the knowledge obtained with this teaches him. From the knowledge obtained with this most effective apparatus, the engineer may now prescribe intelligently the proportions of the cable and the quantities of the different types—that is, the heavy "shore end" in the vicinity of anchorages, and the "intermediate" for less exposed localities—and is competent to indicate where special precau-tion must be taken against chemical destruction of the cable armor by the ocean bed.
This is usually accomplished by serving with
jute and coating it with a mixture of tar and silica, which also defends it from marine insects, but it is found to be difficult to lay the cable with this covering intact. The discovery of some alloy, not so costly as to exclude it from the list of useful metals, exclude it from the list of useful metals, that should show a rate of oxidation notably less than that of iron, yet possessing all its tensile strength and ductility, would be the touchstone to commercial success in submarine telegraphy. The conductivity and insulation of submarine wires is all that can be desired, and once safely laid are indestructible while the armor lasts, but this failing through corrosion, currents and marine insects work their will on the delicate conductor, which of itself is too weak to be lifted to the surface for repair. Hence it is a canon of submarine telegraph finance that provision must be made for complete renewal about every twelve years. bout every twelve years.

The constructing of a profile of the ocean bed from these soundings by the easiest method is too familiar a process to be noticed here, but recent experience has established the wisdom of plotting it with a common vertical and horizontal scale, for the following reason. Of course this domands something very like an o'd-fashioned panorama to be at all manageable, but it is not difficult to devise. Cross-section paper of the proper scale can be procured of any length, and by attaching a common drawing board to a standard bearing rollers at each end, with crank handles, the lengthy diagram can be conveniently used on rolling it by one crank and rolling it up with the other, the point over which the ship chances to be can always be kept on the drawing board.

The use and convenience of this is readily illustrated. It is frequently noticed, in laying a telegraph cable, that the velocity with The constructing of a profile of the ocean

ing the revolutions of the wheel then gives with the surface for any given cable. If, the depth. In Sir William Thomson's original appar-tus the method of balancing the wire paid but by increasing the brake pressure was most elementary, being accomplished by anging small weights of definite size upon bevel gauge cuts the ship's position on the surface, and the sounding over the point where it cuts the bottom measures the down ward pull of the cable at the ship's stern. So then when the outgoing cable gathers speed, while the ship maintains a steady pace, and there is a doubt whether or no the brakes are not becoming polished and greater force should be applied to them, or, on the con-trary, when it passes overboard at slackentrary, when it passes overboard at slackening rate, and the fear arises that dry brakes
or heating journals may be the cause, a recourse to the bevel gauge and profile will
show indubitably that the cable is taking
ground later or ealier, and the necessary
measures may be taken.

At this point it seems proper to make an
apparatus which, in combination with the

ately than could be done by former methods, even with the closest personal supervision of the engineer, whom it relieves of this most exacting and onerous demand upon his line of the cable.

These average 1150 fathoms in depth and were taken in six days, during which the ship ran nearly 700 miles, and for one-third of the time continued work through a misrate between its speed and that of the ship. The revolutions of the brake-drum were taken at regular intervals, more or less close, and compared with the reading of the log, and with a result rarely very satisfactory. The difficulty also of keeping the prescribed strain upon the cable was very great in all except the calmest weather. The new inof bottom were obtained in all cases except the calmest weather. The new intwo-exclusively the occasions when the strument, called the strophometer, consists wire broke. The reeling-in was performed of a dial in full sight of the man stationed at the dynamometer, connected by a driving belt or cord with the brake-drum, the number of whose revolutions per minute are in dicated by the pointer, and evidence of its working given by the sounding of a small bell at each revolution. The normal ship's speed being about 100 fathoms per minute, which preserves it bright and unoxidized speed being about 100 fathoms per minute, for two or three years. Each reel of wire, containing 4000 or 5000 fathoms, is used for about 24 hours, and then returned to its bath and a fresh reel keyed to the shaft of the machine, which is contrived with a view maintain as ordered, with the strophometer to facilitating the operation as far as possible.

There the knowledge obtained with this tenches him.

One simple but most important change in the paying out machinery is that in what is termed the "holding-back gear," otherwise it has only differed in detail from that which Everett designed for the "Niagara" when he assisted at laying the first Atlantic cable. The submerging cable is controlled entirely by the adhesion of several turns of it about a strong drum, keyed to the same shaft that blocks are pressed by a belt, which is drawn tight by weights acting through levers; the details are presented here. A necessary adjunct to this was something to keep a slight pull upon the cable as it took the drum, that the full benefit of its adhesion might be insured. This was compassed by letting pass over the cable V-shaped grooves, in the eripheries of wheels whose axles also car-ied brake wheels, of which the tension could be regulated at will. Other weighted wheels, called "jockeys," rode upon the cable, crowding it into the wedge-shaped channel, thus securing the necessary adhesion. Adjustment of these small brakes gave the moderate pull required for this purpose, but it was discovered that in a senway they became a source of danger. As the stern of the ship settled in the trough of the sea, the brake drum would come nearly to a standstill; then rising with the next wave would cause it to revolve with ex-

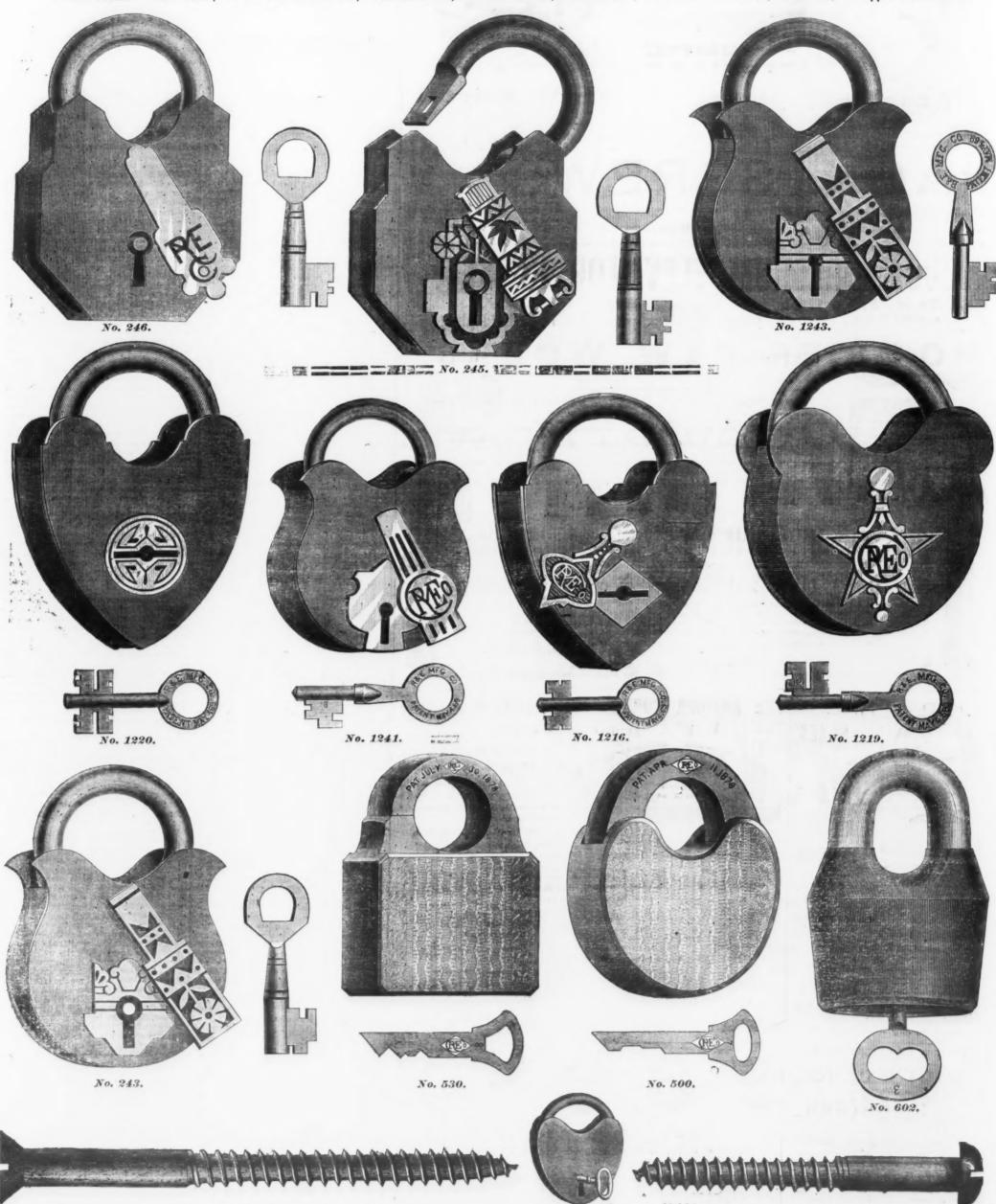
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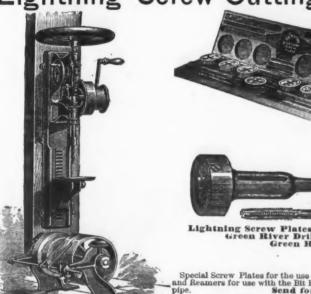


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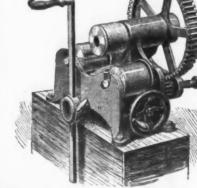
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into which the cable ship may safely run. great railway companies, with their systems more mushroom anchors. These are buried to a suitable depth, and the spider wheel secured to them in such a manner as to re-volve freely. A line is then passed out over the sheave at the ship's bow, carried ashore in boats, rove through the spider wheel, and its end brought back to the ship's stern, where it is made fast to the cable depending from the stern sheave. The powerful picking-up machine in the fore part of the ship now begins heav-ing in on the line, and, as it comes aboard, cable is paid out at the stern of the ship (The sketch, Fig. 4. shows the entire opera-

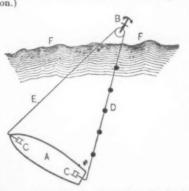


Fig. 4.—Sounding the Shore End of a Cable.

It is necessary to sustain the weight of the cable paid out, and this is effected by attaching barrels to it at definite intervals as it goes overboard. While perfectly effective, these are clumsy to handle and most cumbrous on shipboard, and the author substituted for them, at the laying of the Marseilles-Algiers cable of 1879, india rubber spheres of 3 feet diameter, inflated by a small air-pump when needed. These answered every purpose, were most convenient of manipulation and were capable of the most

manipulation and were capable of the most compact stowage. This operation can be easily carried on at the distance of a mile from shore, and possibly further.

The introduction of the electric light is all that remains to be adverted to. This might seem unworthy of notice to one who had not undergone the wearing anxiety of nightwork on a stormy sea in laying submarine telegraphs. The exhausting influence of hour after hour of intense watchfulness, with every sense strained to make good the handievery sense strained to make good the handi-capped eyesight and catch timely warning of aught amiss with the cable tanks, the intricate assemblage of deck machinery and the elusive indications of the electrical test room, is something that must be experienced to be appreciated. The flood of light poured over the deck by electricity lifts half the burden.

The preceding resume has adhered strictly to its title, being little more than a recital of improvements in the methods of submarine telegraph engineering that have been taught by the experience of recent years. The essentials differ little, if at all, from those adopted in the youth of such enterprises, and is only another proof that the daring spirits who tied continents together beneath the astonished sea, did not win success by a happy chance. It was faith, patience, pluck, close thought and hard work, which never fail of their reward. The direction in which further improvement must be sought is with cables themselves, and not with the methods of constructing, building or laying them. Durability is the great lack, and the promoter of this, in even limited degree, cannot fail of a noble reward.

Marvels in Electricity.

A correspondent of the Parisian thus describes some of the notable features of the Paris Exhibition of Electrical Apparatus, now in progress :

The immense nave of the Palais de l'Industrie is filled with all important material of electric science. It may be reached by a small electric railway, on the Siemens system, starting from the Chevaux de Marly, on the Place de la Concorde, and entering the palace near the Pavillon de l'Horloge. The road runs parallel with the avenue, and

Noaillon, Meritens, Suisse, Wilde, Brush, Swan, Edison, Maxim, Arnaud, Crompton, Brockie, &c.—some in globes, others diffused by enormous Balestriori reflectors. Force is supplied by magnetic and dynamo-electric generators amounting to 1500-horse power. The Pavillon of the city of Paris is adorned as for an art exhibition. Statues and hangings are replaced by fire alarms, electric dials, municipal and police calls, &c. Promotimest, Ohto,

into which the cable ship may safely run. She then splices on the deep-sea type at one buoy and runs for the other. The ship approaches the land as near as safety warrants, and, having anchored, sends ashore a large spider wheel, so called, and one or more mushroom anchors. These are buried great railway companies, with their systems for stoppage and signaling, their electric brakes, train registers, calls and alarms, besides a singular carriage, at work on the Eastern Line, and invented by Messrs. Deprez & Napoli, for observing the running of trains, and registering velocity, traction, trains, and registering velocity, traction force of wind, consumption of steam, &c The basement region offers also the surpris ing and novel results obtained by the recent labors of Messrs. Cabanellas, Hospitalier and Deprez, in the matter of electric div-sion, transportation and distribution, a department in which the French school has been successful.

So much for the basement, the region of

science and practical utility. The upper story has been devoted by the chief Commissioner to scientific curiosities and fanciful inventions for the delectation of the curious but untechnical observer. Two telephonic auditoriums have been arranged to connect one with the Opéra and the other with the Theatre Français, richly furnished, and supplied with some 50 telephones each, where the auditor, calmly seated in his arm chair, may listen to the sonorous recitative of M. Villaret, or the bright dialogue of Croizette and Coquelin. In adjoining rooms the visitors may talk through the Herz tele-phones with distinct cities like Lyons, Orleans, Dijon, or a dozen others. Next comes a series of eight rooms, literal copies of a Parisian apartment of the present day, where everything will be, so to speak, run by electricity. The kitchen is to be lighted by electric lamps; the range heated by electric currents passing through water; a half-dozen electric cooks, by means of in-candescent platinum wires, turn out "electric waffles," and electrically heated metallic plates serve for braziers and chafing dishes. The dining room is fitted out with all the wondrous new apparatus which already threatens our peaceful firesides with its novel blending of science and confort. The central sunlight, in place of a chandelier, may be lighted by the pressure of a button may be lighted by the pressure of a button or the opening of a door. The dishes will be brought up on an electric dumb waiter; doctors, errand-boys, firemen and servants can be summoned by the familiar New York system of dials and calls. The only thing left to do would seem to be to eat by electricity, and, in view of the wonders accomplished even thet seems not so year, improhi olished, even that seems not so very improb

The third room-the parlor-is furnished with electric chandeliers, mantel clocks going by electricity and adorned with electrical groups and figures, telephonic speak-ing tubes and electric fire-places. In the billiard room adjoining, an electrical billiard table enables the player, if not to make his caroms, at least to mark them by an electrical indicator. It would be a pleasant trical indicator. It would be a pleasant policy to add to these rooms an electric chair for the extinction of the persistent bore. You take the idea? Your bore is comfortably seated, smoking and talking comfortably seated, smoking and talking you to death. A light touch on a knob. Crack! your bore is wrung with internal convulsions and set upright on his legs. Exit ex necessitate. Seriously, however, the parlor has an electric piane to be played by "some other fellow" at a distance, and having a Carpentier melographe to make electric record of improvisations. The bed room, besides all sorts of electric calls, has on the toilet table a set of electric brushes. You turn a commutator, offer your head to the gentle caresses of the brushes, and your the gentle caresses of the brushes, and your hair is brushed—if you have any. The series of rooms closes with a family theatre—stage, auditorium, flats and all—lighted by the Werdermann electric lamp, which allows the footlights to be instantaneously raised or lowered, filling the room with a blaze of illumination or leaving it in total darkness at will. In this pleasant room noted Parisian musical artists will give connoted Parisian musical artists will give concerts, to more completely electrify the addience. Finally, a room is devoted to electric views, projections and toys; miniature telegraphic apparatus, trick boxes, magic lanterns, railways, telephones, dolls and automata, for the amusement of Parisian youth and their elders as well.

One of the important industrial inventions

which Americans have been sent is the which Americans have been sent is the electric middlings purifier, the most perfect method known of separating the bran from the middlings. This is usually done by air blast, which blows out the bran. The defects of this system are that much of the fine flour is blown away, and the mill is filled with the fine dust that sometimes causes an explosion. Mr. Kingsland Smith, an American miller, first devised an electrical separa-The road runs parallel with the avenue, and drops its passengers in the centre of the building. The trains consist of two saloon carriages, of the usual dimensions, and a small electric motor, which takes from the rails the fluid supplied by generators at the end of the line. In the nave is a small pond, several square meters in area, in which a miniature steamer will lay a miniature submarine cable on the Colas system. In the basement of the building will be illustrated all varieties of such cable and wire manufacture, adjoining, but not forming part of, the official part of the exhibition, which will comprise all forms of governmental electric apparatus, manipulators, receivers, piles, telegraph posts, isolators, switches, and a thousand other matters of necessary detail in the complicated system of commerand a thousand other matters of necessary detail in the complicated system of commercial or military telegraphy. Towering above the whole nave is an immense lighthouse, the perfected result of the Serrin system, the style adopted by the State of La Héve, and to be employed in the constructions planned by M. de Freycinet.

By daylight the spectator may watch the operations of a whole army of telegraphists, machinists, and other electric specialists, each in his own niche, while at night this swarm of operators and motors is lighted by the blaze of a thousand electric lights streaming from the roof—a grand composite of all known systems—Jablochkoff, Werdermann, Jamin, Siemens, Gramme, Lontin, Noaillon, Meritens, Suisse, Wilde, Brush, Swan, Edison, Maxim, Arnaud, Crompton, Brockie, &c.—some in globs, others diffused

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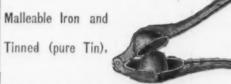
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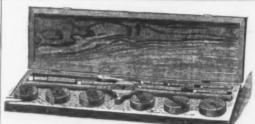




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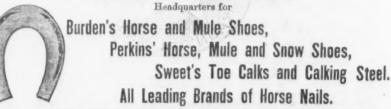
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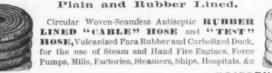
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the city, and he thinks that he will be en-

the city, and he thinks that he will be enabled from this exhibition to form a company for the lighting of the whole city.

In the other departments of the exhibition of the application of electricity Mr. Edison's skill is well displayed. A complete telegraph system may be seen in his show-rcoms. The automatic (Morse), the automatic Roman letter and the autographic systems will be fully demonstrated. Mr. Edison thinks the autographic system will at some future day astonish the world, when it can be further developed. At present this system will redeveloped. developed. At present this system will re produce in Philadelphia a fac-simile of the handwriting of a message in New York. Besides these, in the telegraphic department the duplex and quadruplex instruments now in common use in New York are exhibited. A number of telephones are also included in the list, including the carbon telephone, the motograph telephone, the motograph musi-cal telephone, the telephone recorder (which cat telephone, the telephone recorder (which is the telephone and phonograph combined), and a multitude of telephones of different constructions and principles. Among the miscellaneous articles are a pressure relay and motograph relay in the telegraphic exhibit, a tasimeter, a carbon rheostat, a motograph battery, an exhibition of the application of the etheric force, a number of phonographs and megaphones, and a large number of electric lamps, showing the various stages of the development of the electric light from the first platinum lamp to the present improved carbon lamp; practical llustrations of the use of electricity as a motive power, a complete system of under-ground street tubes, mains and feeders, for the purpose of lighting up sections of cities, and an ore-milling apparatus which will be operated by the use of the electric current.

Old Styles of Weapons.

It is amusing to read of the early Euro bean cannon, to say nothing of the wooden cannon of China. At the siege of Constantinople, in 1413, was used a cannon with a 4-foot bore, that cast a stone missile weighing 600 pounds. In the arsenal of Venice is ing 600 pounds. In the arsenal of Venice is a large mortar composed of several thicknesses of coiled hempen rope, covered with a thick casing of leather. This weapon was captured from the Turks, and fired a shell 18 inches in diameter. Mortars composed of paper, with an outside covering of leather, are preserved in the arsenal at Malta. They were probably of Eastern manufacture, and used during the Crusades or earlier. Early European cannon were of wrought iron, and loaded at the breech, and had a greater thickness of metal at the muzzle than anywhere else, with the idea of preventing the muzzle from jumping up at the moment of discharge. The honor of successfully applying the explosive shell to firearms is due to the Netherlands, but their shells required "double ignition"—that is, first a lighting of the fuse which fired the explosive charge of the shell, and then a firing of the mortar charge, the delightful result of which was that not a few shells burst in their mortars whenever the mortar charge happened to The Germans invented the single ignition bomb.

ignition bomb.

The early hand firearms were hardly a success, because in 1585 Montaigne wrote that the effect of firearms, apart from the shock caused by the report, to which one does not get easily accustomed, was so misgnificant that he hoped they would be discarded. In those days the hand culverin, carded. In those days the hand curverin, of which the Swiss army had 6000 at the battle of Morat, required two men to handle it. It was fired from a fork or rest, which also served as a ramrod. One man leveled and held the weapon during discharge and a companion applied the priming and the match and assisted in loading ing and the match, and assisted in loading and carrying the weapon. Peculiar weap ons, introduced in the first part of the fifteenth century, were the club pistol, the pistol battle-ax and the holy-water sprinkler —all intended for horseback use. All the early firearms were slow to load. At the battle of Kuisyingen, in 1636, the slowest battle of Kuisyingen, in 1636, the slowest soldiers managed to fire only seven shots during eight hours. A quicker mode of ignition was required, and this developed the arquebuse, or matchlock, which carried a match in the "serpenter" or hammer, and had a slow match continually burning in a holder on the top of the barrel. The wheel-lock was a late idea, and was invented at Nuremburg in 1515. Rifles were possibly invented as early as 1440, but the possibly invented as early as 1440, but the possibly invented as early as 1,140, but its grooving would seem to have been paralle with the axis of the bore. Spiral groove were first introduced by Gasper Kollner, o Vienna, in 1498, but it was not till the seven teenth century that the rifle became a military arm on the Continent, and its introduction in England did not take place ti nearly a century later.

Deaths from Industrial Pursuits. Some startling facts respecting the amoun of sickness and death which result directly from the circumstances under which indus trial pursuits are carried on, have latel been discovered in England, where the been discovered in England, where they have been brought to the attention of the authorities as a subject worthy of investigation with a view of amelioration. One statistician who compiled tables on this subject in 1877, giving the records of deaths and injuries by steam boilers, in mines, on railways and in factories, estimated the mortality in England from those causes mortality in England from these causes, during the four years preceding 1877, at a total of 107,000 men, women and children; and he estimated, on the basis of these facts, that 500,000 workmen will lose their lives mines, 70,000 on railways and 130,000 in factories. Another writer on the same subject, criticising these figures, thinks they are altogether too small, and that the accidents reported comprise only a small part of those that actually take place. He is of opinion that not less than 100,000 persons are annually killed in England from causes directly resulting from the industrial occupations in which they are engaged. These statements, which are doubtless based on reasonably accurate data, are sufficiently appalling to arouse from its traditional samp froid even so inert and conservative a body as the British House of Lords. Taking even the lowest estimate of mortality from indus-

trial accidents as the safest basis for estimat

Sir E. J. Reed, after a visit to Japan, lecribes the method of making lacquer in that country as follows:

The Japanese lacquer is laid usually upon articles of wood, and not upon articles of articles of wood, and not upon articles of papier-maché, as many suppose. It is produced from the sap of the Rhus vernicifera, which is taken in its natural state into a large wooden tub or vat, and then stirred in the sun with a large spatula, until its excess of water is evaporated. In some cases the varnish so produced undergoes careful strainger, in other triangles. ing; in others, it is mixed with sulphate of iron, with vermilion, with red oxide of iron, or with indigo; oil is sometimes employed, likewise powdered stone. Into some inferior varnishes, a sort of paste made of rice enters in considerable proportion. There are a dozen methods of employing the various varnishes, differing according to the nature of the object to be produced. In the best lacquer, numerous coatings are applied, dried and polished successively. The first polish-ings are done with a stone named tsu shimada (suitable for hones), the latter by means of water, and a charcoal made from Andromeda valifolia, and the last with pulverized stag's ovalifolia, and the last with pulverized stag's horn. All the polishings are effected by the hand. When gold is used in smooth-surface lacquers, where it is not to be in relief, the process is as follows: The design to be produced is traced on a leaf of paper, which is then reversed, and has repeated upon the opposite side of it the outlines and other features of the design, in a mixture of varnish and vermilion, softened over a mild fire. This side of the paper is then appears to the stage of the paper is then appears to the stage of the paper is then appears to the stage of the paper is then appears to the stage of the paper is the fire. This side of the paper is then applied to the lacquer to be decorated, and the paper is rubbed and pressed upon it by means of a small spatula of bamboo. The transfer of the pattern from the paper to the beating the pattern from the paper to the lacquered surface is further assisted by gently beating the paper down with a small silken bag, containing powdered stone. The paper is then peeled off, and can be used again if desired. The slight relief of the pattern so prosired. The slight relief of the pattern so produced upon the lacquer is rubbed down with carbon polish, and the design, and that alone, is then lightly covered with a thin layer of quickly-drying varnish. Gold, in powder, is then applied to the moist surface by means of a camel-hair pencil if the gold powder be fine, and by means of a small tube if it be comparitively coarse and heavy. The article is then dried for a day in a warm closet, such as is used for drying the ordinary lacquer varnish. The design is nextlightly coated with a very thin layer of varnish. coated with a very thin layer of varnish, applied by means of paper steeped in it and passed very delicately over the object, which is then redried in a closet. The object receives further extremely light coatings of varnish and subsequent polishings before it is completed. Silver is applied in powder in the same manner. When gold or silver is applied to designs in relief, the details of the process vary considerably, but the appli-cation of the metals is effected in substantially the same manner. When gold or silver are applied in leaf, they are laid upon the var-nished surface prepared for them, and dealt with in the usual manner, the varnish acting as a "size" for the metallic leaf. When mother-of-pearl is used as an incrustation for lacquer, it is laid on during the varnishing processes, earlier if it be thick than if it be thin, and the final polishing is proceeded with until the pearl is brought to the surface.

From returns gathered by Ryland's Iron Trade Circular, the position of the blast furnaces in Great Britain on June 30, as compared with March 31, is as follows :

	Furnaces built.		Furnaces in blast.	
Where Situated.	March 31, 1881.	June 30,	March 31, 1881.	June 30,
England : Cumberland	54	54	42	39
Derbyshire	57	57	40	37
Durham	Ges	60	26	24
Hampshire,	9	0	2 0	2
Lincolnshire	18	18	16	13
Lancashire	49	40	38	28
Northamptenshire	25	25	15	17
Northumberland	4	4	4	4
Staffordshire, South	146	144	0.6	43
Staffordshire, North	36	37	22	2.4
Somersetshire	1	1	I	T
Shropshire	25	25	EE	9
Wiltshire Yorkshire, W. Riding.	7	7	3	
Yorkshire, N. Riding	101	101	31	90
Vales:	642	640	379	355
North	10	10		
South	151	152	71	63
Scotland*	151	149	120	120
Total	954	951	575	142

The decrease of 33 furnaces is entirely in the Midland and Welsh districts, Scotland and the North of England continuing their large out

In his address at the recent meeting of the Institution of Mechanical Engineers, the president, Mr. A. E. Cowper, stated that that 500,000 workmen will lose their lives during the 10 years from 1877 to 1886, from 1878 to 1886, from 1879 to 1886, from 1879 to 1886, from 1879 to 1880, from 1879 to 1880, from 1879 to 1879 to

The Iron Age

Metallurgical Review.

New York, Thursday, September 1, 1881.

Publisher and Proprietor DAVID WILLIAMS - -JAMES C. BAYLES . . . Editor. JOHN S. KING Business Manager.

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Forty-fourth Page .- Boston Hardware and Metal Prices.

The determination of the mill owners in Cincinnati to employ no union men, is the natural outcome of an unreasonable strike for wages 30 per cent. above the Pittsburgh scale, which has now been more than two months in progress. The owners propose to begin work the first week in September with strictly non-union labor. The result of this determination, if adhered to, will be to break up the union at Cincinnati. What the men will gain by this is not apparent to any one but themselves.

The Wheat and Corn Crops.

So much, as regards the future of trade, depends upon the crops, that careful estimates are always looked for by business men as a basis for all sorts of mercantile calculations. The Department of Agriculture undertakes to furnish this information in its August report. The following statement in tabular form shows the estimated acreage of wheat in 1881 and 1880 respectively in each State, and also the condition of spring wheat on August 1 and July 1 in each State, winter wheat being omitted from the bureau's reports after the July estimates :

ACREAGE OF WHEAT AND CONDITION OF SPRING WREAT.

	Area.		Condition of spring wheat.	
States.	1881-Acres	1830Acres	Aug. 1, 1881	July 1, 1881.
Maine. N. Hampshire. Vermont Massachusetts. Rhode Island Connecticut. New York. New Jersey. Pennsylvania Delaware. Maryiand Virginia North Carolina Georgia. Fiorida. Alabama Mississippi Louislana Texas Arkansas. Tennessee. West Virginia Kontucky. Ohio. Michigan Indiana Illinois Wisconsin Minesota. Lowa. Missouri Kansas. Nebraska. California Oregol Nevada Colorado.	41,000 21,000 21,000 21,000 21,000 150,000 150,000 150,000 166,000 174,000 174,000 157,000	31.150 13,630 32,506 2,186 760,661 153,663 1,486,606 87,200 534,700 981,300 143,900 175,300 55,000 175,300 156,800 1,755,000	99 96	98 86 98 87 97 777 93 88 88 88 92 95 75 75 98 93 206 80 92 108 88 92 106 92 106 92 106 92 106 92 106 92 106 92 106 92 106
Total	744,000) 36,003,000	38,037,950	8g 8z	97

This shows a decreased acreage planted and a lower average condition as regards spring wheat. A calculation for both winter and spring wheat, based on the accepted data, leads to the conclusion that the yield of winter wheat will be 239,455,000 Bushels, and of spring wheat 154,763,000 bushels; together, 394,218,000 bushels, a decrease of 86,582,000 bushels as compared with 1880. Probably the estimated production will be found in excess of the actual yield, as the damage by unfavorable weather has been greater than can be ascertained. For practical purposes, however, the estimates may be assumed to be approximately correct. The corn-crop estimates of the department, corrected from returns up to August 1st, compared with the July estimate of the condition of the crop, are tabulated as follows:

ACREAGE OF INDIAN CORN AND CONDITION ON AUGUST I AND JULY I.

	Corn	Corn Area.		Condition.	
-	of I	ni.	3	1 4	
States.	l e	2	88	59	
	l be	P.C.	-	144	
		T	14.	H	
	1 11	ď	100	A	
	80	36	Au	Ju	
Walne	9		-	-	
N. Hampshire.	37,000	53,393	8z	82	
Vermont		57.737 57.748	94 80	87	
Massachusetts	56,000	40,225	94	82	
Rhode Island		9,340	85	75	
Connecticut	56,000	76,500	70	80	
New York	762,000	708,691	84	86	
New Jersey	337,000	366,478	86	90	
Pennsylvania	1,374,000	1,271,590	88	86	
Delaware	202,000	180,000	88	85	
Maryland	671,000	457.347	95	90	
Virginia	1,809,000	1,081,913	94	91	
North Carolina.	2,208,000	1,677,623	82	95	
South Carolina.	1,263,000	1,254,792	41	84	
Georgia	8,314,000	2,084,920	8x	100	
Florida	360,000	238,077	77	88	
Alabama	1,938,000	1,739,167	79	99	
Mississippi Louisiana	1,606,000	1,557,920	78	91	
Texas	746,000	889,881	67	83	
Arkansas	2,803,000	2,627,820	46	69	
Tennessee	3,817,000	972.046	74	93	
West Virginia.	571,000	371,851	64 87	98 8g	
Kentucky	2,898,000	1,782,540	60	88	
Ohio	3,134,000	2,929,021		83	
Michigan	855.000	777.115	77	87	
Indiana	3,456,000	3,302,351	79	97	
Illinois,	9,374,000	8,742,178	78	97	
Wisconsin	1,054,000	1,033,593	95	92	
Minnesota	486,000	45 1:490	90	89	
Iowa	6,437,000	5,110,112	80	77	
Missouri	5,650,000	3,912,883	79	94	
Kansas	4,096,000	2,463,470	74	107	
Nebraska	2,035,000	1,843,290	9.2	98	
California	81,000	110,500	95	96	
Oregon	5,000	3.627	94	91	
Nevada	/		100	2.5	
Colorado	14,000	95,337	80	304	
The Territories.	179,000 }		87	97	
Total	63,141,000	52.695,031			
Average condition	on		77	90	
				-	

The deterioration in the average condition of the crop during July is partly offset by the increase of 20 per cent, in the acreage planted. The 77 per cent. average condition would, with the same acreage as in 1880, yield 1,207,000,000 bushels. With the inyield of 1,448,500,000 bushels, or 89,000,000 bushels less than 1880

the business interests of the country? A prominent Wall street banker remarked has done so without hesitation. Her "fair yesterday, after reading the latest European trade" with India has ruined it. Her "fair advices respecting the crops: "Europe trade" with China, enforced by the strong tempting any definite calculation in regard that the poppy crop of India might continue ready for business to day, Sept. 1, as promto the possible effects upon the markets of the United States, is as wide as the world. The Chinese government would ised, the opening will be a dull proceeding. It is, however, easy the United States, is as wide as the world.

who shall furnish it is the question with bids. Her "fair trade" with Japan, also in the lock-gates, appears to have been the which England, France and Germany are enforced at the cannon's mouth, has been result of an egregious miscalculation. now struggling. Within ten days the Bank for years a millstone around the neck of a of England has advanced its rate of discount nation with all the potentialities of rapid from 21/2 to 3, and then to 4 per cent., at and sustained industrial development. Her which it now stands. The Bank of France idea of "fair trade" always was, and alalso advanced its rate to 4 per cent. almost ways will be, much like that which the lion simultaneously. In Germany the rate has has in his dealings with the unprotected been advanced to 5 and 6 per cent. for discounts and advances respectively, and other | ter whom it burts. What hurts England is institutions govern themselves accordingly iniquitous, no matter whom it helps. Is it in the effort to protect themselves against an outflow of gold to the United States in British arrogance in such matters? Should payment for importations of grain. Our pracles of Wall street and of the local grain market predict that the attempt will prove and India, despoiled of wealth and the power futile. European institutions would gladly remit American securities in lieu of gold if powers? Have weaker nations no rights they had them, but it is a well-known fact that these securities are held by the people and not by the banks, and the people are not disposed to let them go, because they are growing steadily more desirable. The prosperity of the United States, of which the present demand for gold is a new indication, affords an additional reason for hold-

The wheat movement results from the needs of Europe. The Mark Lane Express, in its review of the grain trade for the past week, frankly admits that the recent heavy rains "have brought general disaster and ruin to the crops." It was before known that the English markets were very bare of grain and flour, the stock having been suf fered to run out, in reliance upon the new crop about to ripen, but now the promise of the crop is blighted and America is called upon to repair the deficiency. Shipments from this side have commenced on a considerable scale, no less than 1,566,000 bushels of wheat having gone out from this port during the week ending Aug. 26, against 1,000,000 bushels for the previous week, besides 380,000 bushels of corn and 56,000 sacks of flour. This we learn from the official record. And the significant fact should be observed that this movement is coincident with an advance of say 10 cents a bushel on wheat, showing the imperative character of the European demand. Altogether some 3,000,000 bushels have been

taken for shipment at the enhanced prices. In a survey of the situation our most astute observers anticipate a period of pros perity-a continuance of that which we now enjoy-and a money market of comparative ease, favorable to all legitimate enterprises Among other factors, it must be considered that the government treasury is well fortified in gold, and old financiers observe that whenever there is an accumulation of surplus under such circumstances, it somehow finds its way to the people, contributing to the general ease in all departments of trade. All things considered, therefore, there seems to be no reason to anticipate commercial disturbances as a result of the unsatisfactory character of the crops. We shall have less surplus to carry over into 1882 than last year, but this will give an additional impetus to farming operations, and insure whatever good to trade results from prosperity in the agricultural districts.

"Fair Trade."

The meeting held in Exeter Hall, London, on the 9th of August, led by Sir Algernon Borthwick, passed two remarkable resolutions. The first was: "That this meeting protests against the iniquitous system of foreign State bounties which are paralyz-"ing British labor and destroying British industries, and while regarding with surprise and indignation the conduct of Her Majesty's government, demands as a matter of right and justice that Parliament should impose such revenue duties as will 'intercept the bounties and enable British manufacturers and workmen to compete "on a fair footing with foreigners in British home markets." If artificial aids to tection of British industry? The second resolution reads: "That this meeting, regarding with grave apprehension the present condition of British commerce and labor, owing to the operation of foreign protective tariffs, declares that the interests of the country demand the imposition of such revenue duties on foreign products 'as will allow British products to compete on a footing of equality with those of foreign nations at home and abroad." In other words, they demand that Parliament shall imitate the "iniquitous" measures which are paralyzing British labor and trade, to the end that Great Britain may prosper. This whole business is entirely characteristic of the British temper. Whatever is inimical to British interests is iniquitous; whatever Great Britain does is all right. The greatest satire possible on the commercial history of Great Britain is this new cry of "fair trade." Fairness in creased acreage we shall probably have a trade is something which the British nation has never known. Her "wars of the yardstick" have been a burning disgrace to civil-What will be the effect of this shortage on ization. Whenever she has had the power to suck the life-blood of a weaker nation, she must have our grain, and we must have arm of military power, has kept that country's their gold." The vista thus opened, in at ports open to the most pernicious of drugs, freight war. Should the Welland Canal be

not about time that a check was put on not the protests of China and Japan, of Ireland, mourning her ruined industries, of self-sustenance, be heard by the great which England is bound to respect, and which other nations should defend ? There will come a day of reckoning by-and-by, and when it comes England will rue it. Meanwhile, no one will be frightened by her denunciations or deceived by her specious misrepresentations. Her talk about "fair trade" only excites derision among nations which do not fear her aggressions.

Our Foreign Trade Statistics.

The statement of imports and exports fiscal year ended with June, affords the basis for some interesting comparisons.

The value of the imports of merchandise free of duty was \$202,491,547 in 1881 and \$208,301,863 in 1880. The principal imports fine our investigation to the two principal free of duty were as follows:

area or many more me a	0440 1110 1	
	1881.	188о.
Argols	\$3,266,095	\$2,105,4
Chemicals, drugs, dyes,		
&c		6,739.1
Coffee		60,360,7
Fur skins, undressed	2,826,592	8,496,8
Gums	3,170,517	2,444,3
Hides and skins	37,597,111	30,002,2
India rubber and gutta		
percha	11,054,949	9,606,2
Indigo	1,535,530	2,752,9
Rags	3,567,533	5.474.7
Silk, raw	10,888,264	12,024,6
Soda, nitrate of	2,356,183	2,805,11
Sulphur, crude	2,713,494	1,927,50
Tea	21,014,813	19,782,6
Tin, in blocks, bars, pigs	3,977,712	6,223,17
Free articles from Ha-		31-1
waiian Islands	5,373,077	4.464.46

merchandise was \$440,173,081 in 1881 and \$459,652,883 in 1880, a decrease of \$19,479,-The following are some of the items :

	1881.	1880.
Coal, bituminous	\$3,004,777	\$1,593,505
Earthen, stone and china		
ware	6,580,223	5,650,26
Glass and glassware	5,877,918	5,224,511
Iron and steel:		
Pig iron	8,805,458	14,654,227
Bar iron	3,494,670	5,197,510
Railroad iron	3,686,338	2,792,750
Old and scrap iron	6, 381,608	13,304,513
Steel ingots, bars, &c	6,217,443	4,598,407
Steel railroad rails	6,498,050	3,101,527
	14,180,390	17, 223, 266
Wire in casks	2,743,428	3,356,705
Wood, boards, planks,	-11 4014	-133-17-3
joists, &c	6,279,006	5,08g,88a
Of the total imports	of merch	andise the
following more		

ollowing were		
ntered for consump-	1881.	288o.
tion		\$501,944,078
ntered for warehouse.	37.383,947	153,020,662
rought is cars and	14,770,850	13,990,006
other land vehicles rought in American	17,193,313	15,142,463
vessels rought in foreign ves-	33,731,994	149.317,368
sels 4	91,739,321	503,494,913

The relatively heavy loss of freights carried in American vessels looks bad for our merchant marine.

As indicating the course of trade and the eneral prosperity of the country, it is interesting to note that while there was a decrease of \$19,000,000 in the importation of dutiable merchandise, the customs revenues show a coincident gain of \$11,000,000. This results from the increased importation of costly luxuries and articles carrying high rates of duty.

The exports of domestic merchandise were valued at \$883,915,947 in 1881-an increase of \$59,969,594 over 1880. The following are the values of the principal arti-

Willege Hour	45,047,257	35,333,197
Corn	50,702,673	53.298,247
Bacon and hams	61,161,205	50,987,627
Lard	35,226,575	27,920,367
Cheese	16,380,248	13,171.720
Fresh beef	9.860,434	7,441,316
Salted beef	2,665,611	2,881,047
Butter	6,256,024	6,690,687
Meats, preserved	5.971,909	7,877,200
Pork	8,272,285	5,930,252
Tallow	6,800,628	7,669,232
Horned cattle	14,304,103	13,344,195
Tobacco, leaf	18,737,043	16,379,107
Oil, illuminating	34.317,682	38,783,575
Leather	7,133,714	5,744,360
Oilcake	6,284,364	6,259,827
Cotton goods, colored	4.983,322	8,956,760
Cotton goods, uncolored .	6,024,374	5,834.541
Drugs, chemicals and		.,
medicines	3.045.338	3,756,469
Apples, green or ripe	2,301,334	1,100,560
Furs and fur skins	5,444,769	5,404,418
Hops	2,016,970	2,573,202
Spirits distilled from		100.00.0
grain	2,878,388	2,586,585
Sugar, refined	3,049,983	8,717,563
of	18, 307, 673	16, 157, 325
Wool, manufactures of	331,083	216,576
Of the total amount of	A	
merchandise there were		
	1881.	1880.
Cars and other land ve-	_	
hicles	\$5,334,986	\$3,923,558
American vessels	113.737,105	105,908,640
Foreign vessels	764.843.856	714,024,155
Total	8883,915,947	\$823,946,353
All things considered		
	, the your	o nomerantica
are satisfactory.		

canals, suffers severely from the trunk line ming their sails to suit the wind.

"The gold must come," we are told, and opium curse, but British "fair trade" for- the machinery designed to move the valves

The Present Status of Private Brands in the Tin Plate Trade.

The great interest which has been manifested by readers of The Iron Age in all that has been published upon the subject of private brands of tin plate, makes it pertinent to inquire concerning the present status in the trade of brands of this character. Enough time has transpired since the subject was first agitated to warrant an investigation, with a view to determining what the future of the tin plate trade is likely to develop in this respect. The inquiry suggested divides itself into two heads: How are private brands regarded among manufacturers and jobbers in England? and in what esteem are they held by consumers in this country? We purposely except a third inquiry-what do American jobbers and importers think of private brands !- because their opinions can have but little weight in an inquiry of this kind. At best, their sentiments are only the reflex of opinions expressed by their customers. The position occupied by the American importer of tin plate is one in which very little individuality of opinion is possible. His sales depend ssued by the Bureau of Statistics for the upon his ability to offer such goods as his scal year ended with June, affords the customers want. He can, in some cases, direct his trade, but it is seldom, indeed, that he can lead or control it. Hence it is that we omit inquiry in this direction, and con classes interested-the makers and the con-

The most casual inquiry in the trade re veals the fact that the importation of plates bearing private brands has greatly fallen off during the past few months. It is impossible to give statistics in a matter of this kind, but the fact is universally admitted by those who are in a position to know This is attributable to either of two causes, or it may be explained by a combination of both of them. First, it may be owing to an unwillingness upon the part of manufacturers to brand plates to order, or to allow their The total value of the imports of dutiable plates to be exported without brands. It is possible that manufacturers have become tired of lending themselves to the trick of private brands, a piece of business which they begin to see has placed them in an unenviable light in the commercial world. On the other hand, the falling off in the importation of tin plates bearing private brands may be accounted for by a change in the demand upon the part of consumers in this country. We have already said that the position of American jobbers and im-porters in questions of this kind is deter-We have already said that mined almost solely by the wishes of the trade they supply. The fact that leading houses are extensively advertising makers' brands cannot be construed otherwise than that there is a revival in the demand for reliable tin plates. It is possible, as before said, that both of these causes have been at work, and that to them jointly is attributable the fact that private brands are less imported than formerly. We believe this to be the case. Numerous letters received at this office from consumers show that they are sick and tired of the shallow trickery of new names and prices below the market, and that they are now ready, after the unsatisfactory experience of the past, to buy goods upon their merits and to pay a fair price for them. Reliable information which has reached us concerning the opinions of tin-plate manufacturers upon this question, shows that they are sensible of the position in which they have placed themselves in the past by their too-ready connivance and assistance in the deceit of private brands, and that they are anxious for a better record for the future. The tin-plate manufacturers of Great

Britain at the present time look with distrust upon any American importing house "home markets." If artificial aids to industry are "iniquitous" on the part of foreign States, do they become sanctified when adopted by Parliament for the prowhen adopted by Parliament for the proshallow trick of selling goods by name rather than by quality, the joint offspring of cupidity and dishonesty, has lived its life. and in coming home to die is disowned by its nearest friends. The manufacturers will have nothing to do with it. If American importers have been dishonest in their dealings with their customers, why, when opportunity offers, should they not be dishonest with the manufacturers? The importers, while cherishing private brands in secret, have long since ceased to defend them in public, and have been ready to clear their own skirts by casting all the blame upon the manufacturers. The protest of the long-suffering consumer has at length reached the ears of the manufacturers. They are alarmed at the outcry. Self-interest the strongest of motives in the commercial world-prompts their speedy return to honest practices. Once determined upon this policy, they look in doubt and distrust upon the American importer who, in the face of popular opinion, would continue the dishonest methods of the past. Hence it is that fewer plates under private brands are being imported at present than formerly. Consumers do not want them; manufacturers see that it is against their interest to supply The Lake marine, in common with the them, and the importers are gradually trim-

What the future of the tin-plate trade in particulars of this kind is likely to be, is dif-

plates is coming to be considered independbrands may go, but the actual working quality of the plates is the one thing to determine price. A prominent importer recently asserted that, in his opinion, the day was not far distant when brands would be disregarded-when private brands and makers' brands alike would cease to be of any special use or importance, and sales would be based upon actual quality. Just how trade is to be conducted when this stage is reached, he did not attempt to describe, but undoubtedly a substitute for brands of tin plate can be devised. The present system of grading is no system at all, and makes possible all the abuses to which the trade has been subjected. Better means of denoting quality can be found without much difficulty. The oil-can manufacturers of this city for some time past have disregarded brands and bought all their tin upon sample alone. Other prominent industries consuming large quantities of tin plate have experimented in the same direction with satisfaction. The Baltimore packers found that brands no longer indicated quality, and therefore demanded that grades be restored to original standard. Their protest and notice availed nothing. B V cokes are to-day just where they were a few months since. Meanwhile, the Baltimore packers are buying the quality of plates they require for use, irrespective of brands, and are paying for them according to their

A striking feature of the trade in tin plate at present, as evidenced by the advertisements of leading houses, and also by the stocks they are carrying, is the prominence given to plates which, in their quality and finish, differ from the average grades of the last few years. Makers' brands has become a set phrase, and orders are solicited for plates of this sort on the reputation of the brands. These, for the most part, are standard, and have endured the storm of rivalry and competition which has been raging so Now that the sky is clearing, they again appear in their true colors and in eleven, is gratifying but not surprising. It their proper place, and bid fair for the future to be as great favorites as ever in the past. Some importers, not content with thus returning to what, in contradistinction to the shame of the past, may be called a legitimate business, go further and announce plates for sale made by old processes-a direct appeal to the trade, which bears in memory the satisfactory quality of the plates made some twenty-five to forty years ago. New processes, patent rolling, and the like, all of which have had for their object the cheapening of plates, but which accomplish to anybody else; carried beyond this happy it, for the most part, at the expense of quality, are being discountenanced, and the announcement that a plate is manufactured in the old way is assumed to be conclusive evidence that its quality is excellent.

Such are some of the more prominent features of the tin plate trade at the present time. It is evident that consumers are becoming alive to their own interests, and that manufacturers see the foily of making any other than reputable goods. The importers of this country, in their capacity of middlemen, are aware of the change that is taking place, and, as prudent managers, are bringing to this market more of good plates and less of indifferent to bad quality than formerly.

Hours of Labor.

Careful inquiry seems to reveal the fact that men are adapted to certain hours of labor, and that when the attempt is made to accomplish more work by increasing the number of hours, thereby shortening the seasons of rest, nature asserts herself and defeats the conspiracy by means peculiarly her ewn. Just at present, both in our own and in foreign countries, the question of the length of a day's work is being carefully considered, in an effort to determine the happy mean between two extremes. The investigation is a practical one and promises substantial results. The Bureau of Labor Statistics maintained by Massachusetts has made an exhaustive personal inquiry in the texile factories of New England and this State, studying the effects of shortened days so far as adopted, and the feasibility of uniformly adopting them. A series of questions to employers and employees was issued, and the detailed replies occupy some fifty pages of an octavo report, arranged in semi-tabular form. The writer of the report was greatly impressed by hearing personally the same questions answered in the same way, and almost in the same words, by hundreds of persons who are widely separated and speak not only without concert, but without having any knowledge of one another. Massachusetts is the only ten-hour State in the Eastern cluster of textile manufacturing districts, but the production there per loom, per spindle or per man is not less than in the other States, nor are wages less in Massachusetts; the conclusion is that the facts elicited show no reason why the other five States (Vermont not being included in the inquiry) should not adopt the ten-hour system, and with interesting matter, furnished from New

By far the most interesting, as well as most encouraging, fact brought out is that hardware in that market. This correspondof opinion that ten hours will produce as goods, and speaks concerning them as if he much as twelve. A number of mills are knew just what he was talking about. It cited which have actually reduced to ten, will repay reading.

ing. Several facts prove that quality of and yet, paying the same wages as in neighboring eleven-hour mills, have found their ent of brands; that brands may come and product and their profit satisfactory, and not reduced by the change so far as they could judge. The manager of a carpet mill employing 1200 persons said that during certain seasons of pressure the eleventh hour had been added, the result being a material increase of product in the first "the help would grow month, after which 'listless, the production would fall off, and the quality of the goods deteriorate." The Willimantic Linen Company changed to ten hours two years ago, with the result of a considerable loss of product during the first six months, which was, however, attributed as much to other causes. After this the eleventh hour was still left off, but wages remained as when eleven hours were the day, and production showed no loss. To these two experiences of changes in opposite directions, but teaching the same conclusion, may be added the still more forcible narrative told by a manager whose cotton mill, when he took charge of it, was running thirteen hours a day and producing 90,000 yards of print cloths per week. He persuaded the directors to allow a reduction to eleven hours, and forthwith, from the same machinery and hands, the weekly production rose to 120,000 yards.

In Switzerland the inspectors under the eleven-hour Factory Law of 1877 report similar results. One weaving house ran its machinery a little faster, and thus got as much out of eleven as out of twelve hours then reduced the piece wages, but the increased production made gross wages the same as before. Another mill reduced to ten hours, and the owners were surprised to find the amount of wages by the piece the same as it had been under eleven. Another added an hour to the twelve, and the increased production hardly paid for the light. The general testimony is that the fear of diminished production was unfounded and that eleven hours yield as much as twelve.

This testimony, that eleven hours are as effective as twelve, and ten hours as good as does not mean that nine are as good as ten, in fact, there is at no time but an inadequate eight as good as nine, and so on; there is no amount of money to do business on. I feel does not mean that nine are as good as ten, paradox, for no more can be got out of a workman than is in him, and, although it is in his power to stand in his place an additional hour or two, he cannot put anything more into results. Down to the working day which represents the operative's full efficiency, a reduction of time means an increased effectiveness which prevents any decreased production, and hence the shortening is a boon to the worker without cost medium-which is probably at ten hours, but possibly at nine—production would, of course, fall off. The better the workman, the better the work. Improvements in machinery all increase production, but improvements in the man should not be thought useless. Every step in bettering his condition, lightening the burden of his task and teaching him thrift and hope, will return something in the quality, economy and effectiveness of his work. Hence the employers who spend some care on the condition of their operatives, housing them comfortably, providing some facilities for study and amusement, and trying to reduce their exhaustion by every practicable means, must be reckoned wise in their day. It is not all philanthropy; it may be the most enlightened selfishness, for that always dictates some regard for others.

Judge McCrary, in one of the Western United States Circuit Courts, has rendered a decision of more than ordinary significance. The case was that of the Southern Express Company against the Memphis and Little Rock Railroad Company, in which the express company sought legal protection against a refusal of the railway company to permit it to do business over the line of said road. The decision was to the effect that the railroad company was bound to carry goods for the express company, and must not discriminate against it either in favor of itself or of other express companies; and the Judge went on to declare that he had no doubt of the power of the Court to fix the maximum rates to be charged for the transortation of express matter by a railroad, though as a rule an order for this purpose should not be made "until after a reference to a master, and a report by him after a hearing." If this decision is sustained it will mark a turning point in the history of the popular contest with the chartered monopolies. We cannot see that it is in any way at variance with the principle of common law on which we assume it to be based. It makes the railroads what they were intended to be-public highways-and recognizes it as a condition of their charters that evils charged against the railroad monopolies, and points out a practicable remedy under existing laws.

We print elsewhere in this issue some Zealand by a correspondent of the Iron monger, relative to American and English the shorter hours are favored by expediency, ent does not indulge in generalities, but expressed in results. Many employers are deals specifically with well-known makers of

Extracts from the Reports of the Bankers' Convention.

At the convention of the American Bank ers' Association, which opened at Niagara Falls August 10th, Mr. John Thompson, president of the Chase National Bank of New York city, read a paper on the subject of panics. Mr. Thompson said: "The question is so often asked, 'When

will this great prosperity end, or when will another panic sweep over the country?' that it becomes not only interesting, but absolutely essential to our safety, to get the best ideas possible and to analyze the signs of approaching danger. Foreshadowing future events—prophesying— is extra hazardous business. Still, I will recklessly lead off will recklessly lead off into the financial future, begging you, gentlemen, to not only discount, but to take rack usury, if you please, of my views. Panics do occur about every decade. This ten-year period is quite natural. It takes about five years after a revulsion to pay up, compromise or wipe out indebtedness. Then follows five years of prosperity, expansion, confidence in credits—in fact, a boom. The last panic was in 1873. The present pros-perity commenced in 1878. We have now had three years of extraordinary augmenta on of riches, much of it really solid, but most of it emanating from raising prices or putting up quotations. The signs of an approach-ing 'blizzard' are numerous, but very deli-When the stock market bemixed,' and the bulls and bears comes become desperate, and when the courts grant injunctions liberally and the financial knavery of the opposing parties and schem-ing is exposed, then capital and credits insidiously vanish—hoarding is considered the best investment, or loans secured beyond any contingency, even at a nominal interest which is akin to hoarding. This species of financiering involves contraction; distrust follows, and the credit system is annihilated When we consider that nine-tenths, and, I think, nineteen-twentieths of our money, so called, is credit and nothing else, it is no wonder that financial panics come suddenly. The most important sign of a coming panic and revulsion is to be found in our trade balances with foreign nations. As overprosperity has been hugely augmented by importation of gold, so, when the flow of the precious metal is from us, distrust will inspire contraction, and contraction will lead directly to inability to pay. Money not only becomes scarce, but it is absolutely gone. confident that over 95 per cent. of our business and the business of England is done on paper tokens-checks, drafts, notes, on paper tokens—checks, drafts, notes, letters of credit, &c.—which, so long as confidence is good, are a perfect substitute for money; but, like young partridges, disappear 'on call,' not allowing even three days' grace. Discounts are declined, deposits drawn and hoarded. Thus, not only the credit system and the money token power is destroyed, but the real mone disappears, not to be again visible until induced to come out by an enormous depression in prices. At present there is one alarming indication of trouble, and that is in the number and magnitude of new enterprises, involving the issue of millions on millions of obligations. In 1871-72 and for half of 1873, this same sign of coming trouble was apparent, but to a fractional extent as compared with the present. As this is purely a convention of bankers, and as I am probably the oldest member of the associa-tion, I must be excused in uttering a word of caution to bank managers, more particularly to those at the head of deposit banks. In receiving deposits from the general and promiscuous public, we morally, though per-haps not legally, assume a fiduciary trust and in using such deposits the utmost cau-tion and conservation should be strictly adhered to by always having a sure and speedy controllability over a sufficient amount of our assets to meet any 'demand obligation,' even in the hight of a raging pavic. It is criminal to assume liabilities or enter into negotiations, though ever so promising, over which hang a con-tingency that may possibly endanger this fiduciary trust. Intimately connected with the ideas that are briefly expressed above is the spirit of speculation, bordering on gam-bling. It is safe to say that during the past three years nine out of every ten venture have netted a profit. This is because almost continually prices have advanced. When

bankruptcy is inevitable, must always stand in the category of doubtful institu-Mr. W. E. Gould, of Portland, Me., in dr. W. E. Gount, or to making policy in general, said: "If I were to write a book, I should be tempted to write one of advice to young men who are about entering mercantile life. I should say a few words on the relations of merchants to the banks. The feeling of reciprocity between the two classes ought to be in every way encouraged. The banker is interested in the success of his dealer. He sees a great many accounts, and he can be of much aid to the merchant in exposing tricks and extended credits, and the peculiar ways of men who deal with the merchant. The they shall treat all customers alike. This merchant should feel that the banker is his decision strikes at the root of the worst friend; that if he criticises, it is for good motives. For instance, here is a young man just starting in the wholesale grocery business. He is ambitious to do all the business that he can, and probably tries to do more than he ought to. In his anxiety he strikes out for new accounts, and sells some country traders very large bills. He takes their notes and carries them to his bank for discount, where he is kindly told that he is selling such a man too much for his good, and the bank declines his paper. Now.

ses, and many 'lambs' will come to grief

Banks that undertake heavy negotia

I simply touch on this topic because in the delinquency of bank officers it is often shown

that the defalcation is the outerop of a ven-

tions which, if fortune favors, will yield

normous dividends, but if fortune frowns,

attempt any sharp practice on their banks. Fictitious balances or balances arranged so exchanged checks, and a thousand and one little sneaking ways, only hurt a merchant and destroy his credit. The banker's ledger generally shows a continuous balance, varying with each transaction. Averages, and not 'put up jobs,' show the value of an account. My judgment is that there is now but very little 'shaving' and 'grinding' exercised by the bank toward the borrower. Nor is there any disposition of this kind in respectable quarters. Money is an article of merchandise. It has its price. Its price varies, like the price of sugar and flour. Firms of undoubted credit can hire money lower than can some others of lower credit just as ready money and a sharp buyer can buy 100 barrels of flour cheaper than a man who purchases on four months and is slow pay. It is true that banks do not discount all the paper that is brought to them. Nor are they bound to. They have the right of choice as much as a merchant has whether he will trust out a bill of goods.

Better Protection for American Ores.

PHILADELPHIA, August 23, 1881. To the Editor of The Iron Age.—
Your interesting leader, entitled "The Tariff on Foreign Ore," recalls some remarks of the American Manufacturer on the same general subject. The Marquette Mining Journal demands such protection to ore as will "stimulate production and con-sequent competition," instead of a "jughandle sort of tariff which admits foreign ore mined by pauper labor into competi tion with the home miner, who is, by reason of the protection given to other industries, compelled to pay the highest prices for labor," &c. The Manufacturer replies labor," &c. The Manufacturer replies that they have never heard of any complaint from the iron ore miners or their organs, except that periodically made by the Mining Let a mine operator of the At Journal, &c. lantic seaboard say that if " no complaint has been heard from the Eastern slope in regard to the duty on foreign iron, it is only a proof of our lack of organization and need of more intelligent representation. If the principle of protection to American industry is sound, iron ore is entitled to its fair proportion. If "alleged enormous profits" connected with Lake Superior mining make a valid reason for doing away with pro-tection to iron ore, why should the duty on steel rails remain at \$28 per ton? Whether the business of making Bessemer rails is absolute-ly open to home competition seems to be in loubt: it certainly is practical le to buy or nines, even in Lake Superior. not our Pittsburgh manufacturers buy and operate lake properties? Some of the Hud-son River furnacemen are interested in Lake Champlain and Duchess County mines, and, as a rule, the Lehigh iron men contro more important magnetic deposits of New

The writer having been engaged in mining ore and making charcoal iron in Lake Superior for several years, knows that mining risks, as well as profits, are taken there as lsewhere. It required pluck and persistent faith to open mines in the early days; to cut down forests and provide adequate shelter for workmen; to accumulate supplies for rigorous winters, extending from November May, and thereafter to build railroads, wharves and shipping. If the harvest, on the whole, is great, surely such enterprise, genuinely American, should succeed. Where, however, has intelligent business energy proved more splendidly successful than in th Pittsburgh district ? It is not long since our Eastern furnacemen heard it "alleged" that \$4.50 at ovens for Cennellsville coke yielded rather handsome profits, and they now feel that \$4 per ton at furnace for Anthracite is not in fair proportion to \$19 for gray forge

The market for Lake Superior ore, being 300 to 500 miles West of the seaboard, is not, perhaps, seriously broken into by foreign competition, but how is it with the New Jersey operator? The mines are located on the rugged mountain ranges of Northern New Jersey, extending from the New York line at Stirling through Passaic, Morris, Sussex and Huntingdon counties, with light outcrop near the Delaware River, and on the Pennsylvania side considerable mines at Durham Iron Works. The great bulk of the ore produced last year comes from the old deep mines of Central Morris County, the output from open cuts or surface dig gings being but trifling outside the Chester district, which raised little over 50,000 tons. As an example of the necessarily costly character of the deep work, one celebrated mine, producing 2000 tons per month from a vertical depth of about 1000 feet, contend-ing with heavy bodies of water, consumes under boilers 250 tons coal monthly. To deliver Jersey ores to the nearest market (outside local furnaces), that of the Lehigh, there are usually the local charges of a lateral road, besides rate of main lines, cost ing for a haul of 70 to 80 miles, say, \$1.25 to \$1.50 per ton; while to reach the Schuylkill Valley the transportation runs up to \$2 to

\$2.25 per ton.

The railroads bringing coal to, and ore from, the Jersey district, having "pooled their issues," and nature having provided no water outlet, we certainly "take two excep tions to the present duty on ore-first, that it is not high enough, and second, that the duty should be specific and not ad valorem. Foreign ore, invoiced at figures based on Spanish and African labor, is carried to the steel works at minimum rail charges, every important track terminating at or conveni ent to tide eagerly competing for this carriage, while American railways second American legislation in discriminating in favor of foreign ores. JERSEY.

the banker notices that another concern is working hard to shove that customer off, and this ardent young man may get a big load before he is aware of it. I can recall very many cases where merchants would have saved many bad debts if they would working hard to shove that customer off, and this ardent young man may get a big load before he is aware of it. I can recall which in a few minutes completely demagnetic to unrestricted competition.

Mr. Maish's action. Either he expected to lose his suit on appeal, and consequently decided that it was better to settle now on favorable terms, or it was made to appear to which in a few minutes completely demagnetic to the first of the first of the saver of t

but have taken a hint kindly given. I rangements the watch to be demagnetized is should also caution young merchants not to attempt any sharp practice on their banks. revolving electro-magnet, and is at the same time gradually withdrawn from the latter's as to look well the last day of a month, and influence. The theory is that the watch is subjected to rapid reversals of polarity in a gradually weakened magnetic field until the final reversals are practically nil. At all events, the machine restores to running order a watch so thoroughly magnetized as to be incapable of making a single stroke of

> The Calorific Power of Coal Gas .-At a recent meeting of the British Associa-tion of Gas Managers, Mr. F. W. Hartley read a paper on the "Calorific Power of Coal Gas," in which he gives the results of a number of carefully conducted experiments. He took a Bunsen burner with four 3/8 inch tubes as a standard, inasmuch as the results it gave were higher than those realized with any other. The indicated calorific powers, after correction for barometric pressure and for the temperature, ranged from 365 to 392, the water being raised from various temperatures between 40 and 60 degrees up to 210 or 211 degrees, and the average result being 382 units per cubic foot. Under similar conditions, and using each burner in such manner and with such rate of consumption as was found to give the highest effect, a cluster of small fishtail burners gave results equal to 98 per cent, of the standard; an 8-tube insen, 92 per cent.; Wallace's solid flame, 97 per cent.; a common shilling article, which is called the "Egyptian," or per cent.; another known as the "Déposé," 83 per cent. One, which is much vaunted as celling all others by its very modest construction, gave 93 per cent.; and a larger one of the same kind 87 per cent., with the accompaniment of a detestable smell if the rate of consumption were unduly increased to a very trifling extent. Taking the average of the results realized with the best with all the many gas-stove tested, we have 360 units indicated as the power of the gas per cubic foot in raising water to 210° or 211° F. If, as Mr. Hartley believes, the real power of the gas em-ployed was, on the average, 680 units, 320 units, or 47 per cent. of its heat, were lost. The experiments made agree perfectly well with those made by Mr. Lewis Thompson with the gases of several companies in the years 1852-3; the average results of his experiments being 374 units per cubic foot.

Stockholm Iron Gondolas.

A correspondent says : Behind the palace of the King of Sweden, at Stockholm, is a spacious quadrangle, with a thoroughfare for foot passengers. A fine art gallery and for foot passengers. A fine art gallery and small, though highly cultivated, gardens flank the eastern side, and a paved courtyard, where are some small field guns, the western. It is altogether a most noticeable building, but we must not proceed any further than half way toward it, cross only one bridge, and find ourselves, by descending a flight of steps, in the grounds of "Bairn's Café." A landing stage, nearly level with the water, enables us to get on board the prettiest imaginable little screw propeller. She is canted around by a boy, beat-hook in hand, and darts away at surprising speed. These vessels—Stockholm's gondolas—average about 50 feet in length by 8 or 9 feet beam, with engines of from 1 to 5 horsepower. Their machinery appears to my unprofessional eye very compact and sim-ple. Boilers tested up to 120 pounds pressure on the square inch, while working power of 60 pounds is the maximum strain permitted by law; the miniature cylinder, fixed vertically above the shaft, diameter or length of stroke unascertained, and patent indicator pointing steadily to 59, no allowable pressure being lost. They use coke for fuel, and have everything exposed to view except the shaft. A seat ex-tends all around, with awning in bow tends all around, with awning in bow and stern. Chilly persons can put their feet on the boiler, or seat themselves near the furnace door. Others, preferring a cool place, may avoid the engineer with his snorting charge, and sit aft by the captain, or else go well forward to the boy. busy he is-stoking, fending off. making fast and collecting our fares. This youth represents, in fact, the crew, and cannot blunder for want of officers, since there are two grown-up men over him. He carries a leather bag filled with brass checks and small change, and goes through the cere-mony of selling these checks for ten ore (three half-pence) and collecting them again soon after, by which I imagine that his left hand keeps a sort of control over his right. to the strengthening of his better nature. A friend desirous to maintain the common sense of the check system asserts that it originally implied supervision by the captain, who was ex-officio the proper collector. Your readers will like to know at what rate we steamed. I should say that seven knots an hour was our lowest speed, and 10 knots our highest; for the size of the boat makes a considerable difference, being, as is the nch on a man's nose, an important when the scale is so limited. I am told that a new Swedish angslup, completely equipped with an engine of 2-horse-power, and capacwith an engine of z-noise-power, and capacity for taking 60 people—their licensed number—in smooth water, costs less than 300 guineas. They are elegant models—iron built, with round stern and fine hollow bow,

The barbed fence wire controversy has taken another turn. A correspondent of the Chicago Tribune, writing from Des Moines, Icwa, states that Jacob Haish has joined the combination and withdrawn his appeal to the Supreme Court. If this is true, it leaves the battle in the hands of the Iowa State Farmers' Protective Association, with a good deal less encouragement than its members were disposed to draw from the Since the introduction of dynamo-electric fact that their fight was already half fought machines a good many valuable watches for them. There are two ways of viewing have been almost completely ruined by hav- Mr. Haish's action. Either he expected to

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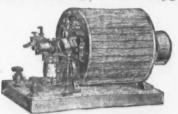
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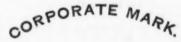


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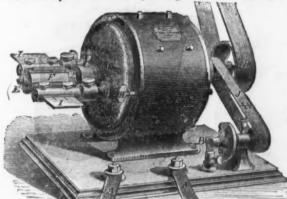


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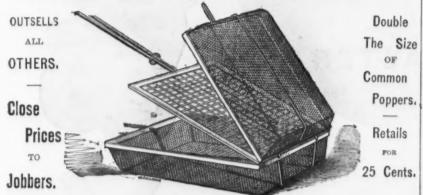
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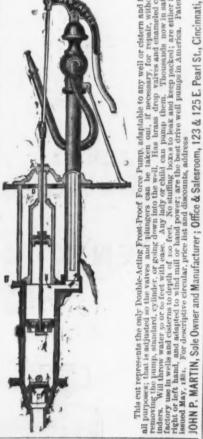


Wood Patent, April 14, 1874.
Made of Plated Wire. Durable and Handsome. BROMWELL MANUFACTURING CO., Sole Makers, Cincinnation Agents: W. H. QUINN & CO., 79 Chambers Street, New York.

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LACKSMITHS

(Patterson's Patent), Portable or stationary, superior to stone or brick Can be used with bellows or fan. Send for infor-mation to the

FORGE COMPANY Brooklyn, E. D., N. Y.

The Pottery Industry.

The remarkable growth of the pottery in-dustry of America, of which Trenton, N. J., s the acknowledged center, within the last quarter of a century, and more especially during five or ten years back, clearly proves that it is destined, at no far distant period, to practically shut out all foreign competition in that line. According to the official statis-tics compiled by census agents of the condi-tion of the industry on the 1st of June, 1880, tion of the industry on the 1st of June, 1880, there were altogether at that period existing in the United States 104 establishments of all kinds, large and small, having in the aggregate about 320 kilns. The amount of capital invested was about \$4,000,000, the number of hands employed on the average 5800, the amount of wages paid out in one year up to the period mentioned \$2,200,000, and the total value of product \$5,000,000. In Trenton alone there were 29 establishments, representing a capital of \$1,902,500 and having 153 kilns. The average number of hands employed was 2877, the amount of wages paid out in one year \$983,177, and wages paid out in one year \$983,177, and the value of product for that period \$2,341,-337. East Liverpool, Ohio, comes next to Trenton in importance, having 25 establish-ments, representing an aggregate capital of ments, representing an aggregate capital of \$1,037,000, with about 105 kilns. The number of hands employed here was 1513, the amount of wages paid out \$559,000, and the total value of product \$1,278,900. New York State had 14 establishments, representing a capital of \$290,000; hands employed, 510; wages paid out, \$185,000; and total value of product, \$380,000. The rest of the potteries are scattered throughout Massachusetts, New Jersey, Pennsylvania, Maryland, Ohio and Kentucky. Since the completion of the statistics by the Census Department there have been about ten new potteries started, while others are being conpotteries started, while others are being con templated. In Trenton alone four new es tablishments have been put under head-way since that time. In the year 1860 there ware, according to the census, about 50 establishments, representing a capital of \$1,341,774, employing 908 hands, paying per year \$934,918 in wages, and producing about \$2,463,681 worth of ware.

The output of these potteries consisted chiefly of coarse brown ware and Rockingham goods. The class of wares now made chiefly of coarse brown ware and Rocking-ham goods. The class of wares now made consists principally of cream-colored, white granite, porcelain and the better class of hotel and staple goods. Especial attention is being paid to decorations, Trenton having several first-class establishments devoted to that purpose, and employing some of the best talent that can be had on both this and the other side of the Atlantic. Photo-lithographing, however, is carried on in only one pottery, the "New Jersey," while most of the others turn out very fine specimens of under and over-glaze painting, and one decorating establishment is making a specialty of producing imperishable portraits in tiles and plaques. The busts of President and Mrs. Garfield have recently been produced with fine effect. All sorts of new patterns are being continually invented, and the great objective point seems to be to equal imported goods. Rich mines of raw material are being worked in various parts of New Lorsey, Ohio Penpeylyania and New York. are being worked in various parts of New Jersey, Ohio, Pennsylvania and New York, Jersey, Ohio, Pennsylvania and New York, and there is no scarcity of it perceptible. Flint and spar of the best quality are within easy reach of all the potteries, and all that is apparently needed is superior skill and workmanship in order to produce a class of goods equal to the best that is imported. The manufacture of sanitary ware is receiving much attention, four otteries in Trans.

The manufacture of sanitary ware is receiving much attention, four potteries in Trenton being devoted to that line.

In the Tariff act of 1780, passed by Congress at its first session, in the city of New York, a duty of 10 per cent. on imported earthenware was imposed; it was subscquently advanced to 15 per cent. then to 17½, and in 1812 to 35 per cent. Under the Tariff act of 1816 it was reduced to 20 per cent., at which rate it remained until 1842, when it was advanced to 30. Again in 1857 when it was advanced to 30. Again in 1857 it was reduced to 24, in 1861 advanced to 25, a year later to 35, and in 1864 to 40 per cent., which rate of duty has since continued. The rates of duty on brown earthenware and common stoneware are 25 per cent.; on china, porcelain and Parian ware, gilded, ornamented or decorated, 50 per cent., and on plain white, not decorated, 45

The wages paid to operatives are about as follows: Ordinary labor, per week, \$7.50 to \$10; kiln work, per day, \$2; jigger men, per day, \$2.50 to \$4; pressers, \$2.50 to \$3; the coke ovens in the North of England. It

Jersey was built in the year 1900, bertville or Old Bridge, Middlesex County, where stoneware, terra cotta and Rockingham ware have been produced to some extent ever since. In the year 1825 a whiteware kiln was built in Jersey City, which was said to be the first in the State, when the leading operatives employed there were Frenchmen, and the kaoline and clays used were imported from France. James Taylor, who worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there were imported from France. James Taylor, who worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there in 1832, is said to be the worked there were imported from France. James Taylor, have been made to apply a remedy to so great and wasteful an expenditure of heat—successful as far as they go, have been made to apply a remedy to so great and wasteful an expenditure of heat—successful as far as they go, have been made to apply a remedy to so large in point of amount that there is usually no difficulty in obtaining worked there were worked there were worked there were worked there were worked the worked who worked there in 1832, is said to be the first practical "thrower upon the wheel," in this country, and was the pioneer potter of Trenton. The business was commenced in that city in 1852 by the then firm of Taylor this country, and was the pioneer potter of Trenton. The business was commenced in that city in 1852 by the then firm of Taylor & Speeler, who commenced to make Rockingham ware. In 1853 the first cream colored ware was made and in 1856 the first white granite ware. The first pottery fitted up for the exclusive manufacture of white granite ware and the speed with the stone sh, zing white and magnesia with water glass form similar stones. Ransom's artificial stone is prepared by mixing sand with water glass form similar stones. facture was from 1852 to 1859, and, in fact, this was the first successful commencement of the business in the country. The success of the industry in Trenton is attributed to the benefit derived from a protective tariff, a superior location, possessing railway and water facilities for transportation of raw materials and finished products, and the enterprise and pluck of the manufacturers.

The formation of the United States Pot-

ters' Association, of which Congressman John Hart Brewer is the president, about five years ago, may be mentioned as another reason which contributed to success. An-nual meetings are held, at which the con-dition of affairs is discussed, notes compared and steps taken for the further advance ment of the interests of all concerned. The election of Mr. Brewer to Congress is conas he will watch closely and oppose strongly any attempt that may be made for the reduction of the protective tariff. All the manufacturers are willing that the present rate of tariff may continue, and want neither an increase nor a reduction. Mr. Brewer himself is the leading spirit in the Etruria Pottery Company, of this city, which is one of the oldest and most extensive, and was the first and only conservation to company is one of the oldest and most extensive, and was the first and only concern in the country to engage in the manufacture of Parian figures. All the potteries run nearly full-handed the year round, and it is estimated that the compensation paid to labor is fully 53 per cent. of the total outlay. The ceramic 53 per cent. of the total outlay. The ceramic art is now receiving more attention than ever before, the Etruria (New Jersey) and several decorating establishments devoting much capital and skill to that line alone. It is the opinion of the leading manufacturers that in five years from now American decorations will fully equal those of Europe, providing there is no reduction of the tariff made, which would obstruct the present made, which would obstruct the present progress.

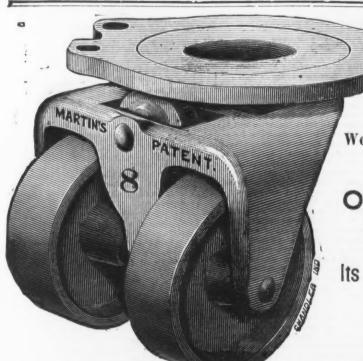
The returns of the Board of Arbitration and Conciliation for the Manufactured Iron Trade of the North of England give reliable data for the North of England give reliable data for the great bulk of the plate trade of the North—the exceptions to inclusion in these returns being few and slight. If we glance at these returns over a period of glance at these returns over a period of some years we shall see the greatness of the growth of the plate manufacture in the North. In the year 1873 there were made and sold by the associated firms 165,000 tons of iron plates, in 1874 that quantity rose to 178,000, falling off, however, in the following year about 6000 tons. In 1878 there had been an increase to 234,000 tons, with an after fall in 1879 to the old amount of 173,000 tons. But last year the production reached the large total of 316,000 tons, and this year that amount is being exceeded, for the rate of the production is now about the rate of the production is now about 360,000 tons, or considerably more than double the production of the prosperous year double the production of the prosperous year \$373. Put into another form, it may be said that while in 1879 the money value of the plates made by the associated makers in the North of England averaged £30,000 monthly, and the plate trade may be said to be not only the chief of the manufactured iron trade, but also the greatest supporter in the North of England of the demand for crude iron. It is not alone that the North produces plates for its own great shipbuilding duces plates for its own great shipbuilding yards, but it is also sending large quantities of plates to the Clyde and to the other ship-building centers. It has, indeed, for this branch of trade special advantages, and in the past it has made the most of them.

Herr M. Gruber, of Munich, Germany, has made a series of experiments to test the question whether carbonic oxide gas is poi-sonous or not. He experimented with rabsonous or not. He experimented with rab-bits, chickens and mice, and subjected them to mixtures of air with 0.02 to 0.05 per cent. of carbouic oxide. He found that very small amounts have an injurious effect upon these animals. Herr Gruber himself, on two successive days, breathed air for three hours at a time, the air containing 0.021 per cent. in one case and 0.024 per cent. in another case. He did not notice the slightest symptom. He then examined the air in several laboratories, in a boiler house in which a slight smell of carbonic oxide could be detected, and in a dwelling room heated by an iron stove, the inmates of which complained continually of headache during the cold season, and who stated that it grew worse when the stove was working. He could not find any carbonic oxide, nor could he detect any in a small bath-room where a small stove was kept at a red heat for hours
Although a sample of air was drawn immos
diately from the side of the stove, not a traca
of carbonic oxide could be discovered, nor
could he find the gas in a schoolroom heated by a hot-air furnace

to \$10; kiln work, per day, \$2.50 to \$3; per day, \$2.50 to \$4; pressers, \$2.50 to \$3; boys and girls, per week, \$3 to \$4.50. It is estimated that the average remuneration is fully 100 per cent greater than that paid in Europe for the same labor. The cost of material is about as follows: China clay, per ton, \$17 to \$18; ball clay, \$7 to \$8; feldspar, \$14; fiint, \$12, and coal, \$4 to \$4.50. The average in favor of Europe is said to be over 100 per cent.

It is said that the first pottery in New Jersey was built in the year 1800, at Herrory and Rocking
Old Bridge, Middlesex County, and Rocking-

ware, such as is now made so largely, was the present City Pottery, of Trenton, then owned by Rhodes & Yates. So far as Trenton is concerned, the infancy of the manufacture was from 1852 to 1859, and, in fact,





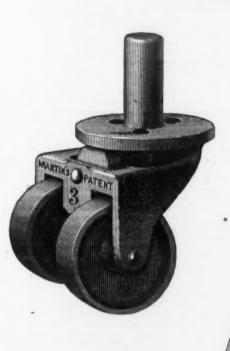
We would be pleased to supply our New Catalogue to the Trade.

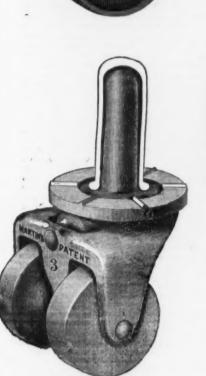
Our Caster is Applicable to a very Large Variety of Uses.

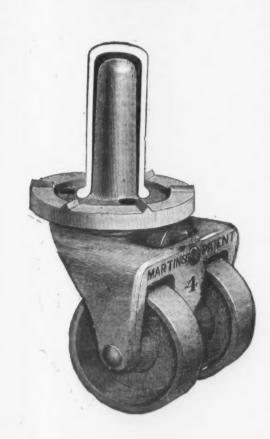
Its Consumption has been doubled four times in four years.

PATENT











MARTINS









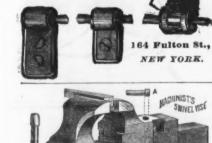
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TUCKER & DORSEY, Manufacturers, INDIANAPOLIS, IND.

The Only Perfect Folding Saw Buck in the Market.

Torrey's Door Springs.

S. ROEBUCK & CO.,



Torrey's Patent



S. ROEBUCK & CO., Manufacturers. 164 Fulton St., New York.

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Is designed to be attached to any Barrel or Cask, thereby converting the same into a temporary Tank, thereby converting the same into a temporary Tank, atted with an effective Pump, and while protecting contents from dirt and waste, the owner has entire control of same, by simply locking the cover.

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Who buys in bulk any of the various kinds of Oils, or in fact any Fluid that can be Pumped;

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in Malleable Iron made to order. HAMMER & CO.,

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Patentee and Sole Manufacturer,

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A. G. MOREY & CO., 90 Randolph Street, (McCormick Block), CHICAGO, Manufacturers for U. S. & Canada, under Letters



Sent by express on receipt of \$1.00. Agents wanted. Brass Molders and Manufacturers aple and price of Fine Red Bra

W. J. CHAPMAN, Baltimore, Md.

INDUSTRIAL ITEMS.

MASSACHUSETTS.

A number of gentlemen have been negotiating with Anthony & Cushman, of Taunton, for the purchase of their present tack factory, soon to be vacated. The parties contemplate running a tack concern of 50

The Orange Sewing Machine Co. are shipping 400 machines per day.

The Holyoke Machine Co. have just made

the casting for a Boyden water-wheel of 9000 pounds weight, for parties in Lowell. The Iron Works rolling mill at Fall River commenced operations on Monday, after having been shut down for repairs about ten days. In order to meet the require-ments of the company the mill will be run beth sight and pany the mill will be run

both night and day.

The Mason Machine works, Taunton, of which William Mason, is president, William H. Bent, treasurer, and Frederick Mason, agent, are well-known builders of cotton machinery, the president of the company being a veteran in the business, which was being a veteran in the business, which was started by him in 1842. They now employ upward of 900 men in the various departments of their works, and are running sharp up to their fullest capacity with large orders ahead. Among other orders are some 34,000 spindles of ring spinning frames for the Border City Manufacturing Co., Narragansett Mills, Whittenton Manufacturing Co., Canoe River Mills, R. W. Lord & Co., F. Shreder & Co., and John Farnum & Co. Most of them have the Mason patent spin-Most of them have the Mason patent spindle; also over 40,000 spindles of Mason mules for the Peabody Mills, Ashland Co., Potomska Mills, Cohannet Mills and China Manufacturing Co., besides large orders for their regular work such as cards way heads, drawing frames and looms. Boston Commercial Bulletin. The Walworth Manufacturing Co., First

street, South Boston, are dredging a chan-nel from their wharf to the main channel in in the harbor, at an expense of \$3000. They are also erecting a large brass foundry and making other improvements. The foundry building is to be of brick, made from the brick of the old chimney and ovens

formerly used by the glass works.

The Tremont and Suffolk Mills, at Lowell, have given another order to the Lowell Machine Shop for 38 Foss & Pevey cards. These mills are now running, and have ordered 222 cards of this pattern.

The Robinson Iron Company, of Plymouth, have so much work on hand that they are

running the entire 24 hours, and have em-ployed a gang of men from East Taunton for a night gang.

CONNECTICUT.

The Harvey Manufacturing Company at Falls Village is doing an extensive business in turning out bolts. They are now averaging about 7000 per day, and expect soon to double that number. There have lately been added to the works several new machines, and they soon expect to put in a large and powerful engine.

NEW YORK.

The new eight-pot furnace of the Bushwick Glass Works, Brooklyn, will go into operation on the 1st of September next. This is the largest furnace yet erected by the proprietors, the pots being of much larger capacity than those generally used in glass factories.

Work has been resumed at the Star Forge of the Albany Iron Works.

The large furnace of Rumsey & Co., Seneca Falls, is being enlarged by an additional states of the star of t tion 60 feet in length by 44 in width. The firm is continually adding to its facilities for manufacturing, and with all its efforts in For all kinds

of Transoms,

Fanlights and

Skulights

Fanlights

Fanlights of the largest foundries in the State

The United States Mineral Wool Company, with offices at No. 16 Courtlandt street, New York, was organized June 9, and is now fully engaged in the manufacture and sale of mineral wool. This article is becoming a staple in the building materials trade, and has lately been brought to a high grade and has lately been brought to a high grade of quality. It is used to prevent condensa-tion in steam cylinders and pipes, to protect water pipes, to protect hot-blast pipes, as a non-conducting packing for ice boxes, for wiping wire after it has passed through tin or zinc baths, for lining floors, and as a mold, fire and vermin-proof filling of walls and partitions. It is one of the best and most economical non-conducting materials in the city. They have so-cured a wide-spread reputation, and have to keep their works running night and day. Williams & Co., Alliance, are about having built a one-story building for the erection ever made.

PENNSYLVANIA.

Buckwalter & Co. have commenced the erection of a pattern shop at Royersford, to be 20 by 50 feet, built of brick, with iron rindow frames and shutters.

It is now an established fact that the West

Hamburg Rolling Mill, at Hamburg station, on the Reading Railroad, will continue in operw. E. C. Coxe, Esq., Superintendent of the P. & R. Rolling Mill, this city, and Messrs. Nevigold and Sheids, of Bristol, Bucks County, proprietors of a rolling mill at the latter

Workmen are engaged to lay the foundation for a new rolling mill along the Wil-mington & Northern Railroad, just south of the borough limits of Contesville, Chester county. The mill, when completed, will be one of the most complete in this State, and the machinery will be new and the most improved. The structure will be known as the "Worth Brothers' Model Mill," and will

employ a number of men.
Schmertz & Sons' window glass house, in Brownsville, have the fires lit and commenced work September 1st. The men have had all the rest they want, and look more like grangers than glass workers, after two months hunting and fishing.

Rodman Furnace was put in blast on the 24th ult. and is doing well. Company, Birdsboro, has been blown out for repairs. The stack will be relined and the engine and boiler underso of the relined and the last Tuesday was pay-day at the Talket engine and boiler undergo a thorough in-

were there a plentiful supply of water. Two collieries, Turkey Run and Shenandoah City, both located in Shenandoah, and operated the roll. by the Reading Company, have been compelled to suspend for want of water. If rain does not soon fall, other collieries will follow suit. Many are hard pushed now for water of the company state the real company state. suit. Many are hard pushed now for water and cannot stand the strain much longer.

The shaft of the plate rolls in the boiler plate mill of the Pottstown Iron Company was

complete coal mining outnt, to be asset as again after a long idleness.

A fire broke out in a flour mill in Beaver Falls on the night of the 28th, which communicated itself to the works of the Pittsburgh Hinge Company, the Beaver Falls Steel Works and the Beaver Falls Cutlery Company's The Chicago Iron Foundry building at Dullman is rapidly being pushed toward and the Beaver Falls Cutlery Company's Works. The loss will be quite heavy on the Hinge Company and the Steel Works. All the concerns are insured. The fire is supposed to be a concerns are insured. posed to have been caused by spontaneous

McKee & Co., of Brownsville, are making a merchant iron by a new process covered by patent, equaling in quality the finest charcoal iron produced in knobbling fur-naces or the best imported Swedish iron, and is successfully used in the manufacture

Thomas Evans & Co.'s new chimney factory, on Eighteenth street, is rapidly approaching completion. They have fired up and will commence blowing on Monday next. Work is progressing on other parts

perfection. Trade is very fair.

Wm. Fortune, formerly of Fortune,
Fahnestock & Co., South Side glass manufacturers, is in the city making arrangements for embarking anew in his old business. The new factory will be located in Iowa. The exact site has not been chosen,

completed.

A movement is on foot for another rolling mill in Niles, Ohio. It is proposed by 12 skilled workmen to organize a co operative ompany

company.

Pennock Bros., Minerva, are building a new shop for wood-working machinery. It is 40 by 75 feet, with a wing 24 by 30 feet, and will be fitted with new machinery driven by an engine of 45 horse-power. It will be ready for use in about five weeks.

Reynolds Bros., Columbus, file cutters, employ nine hands. They are the only hand-cut filers in the city. They have se-

ing built a one-story building for the erection of the heavy machinery that they are con-

stantly constructing.

The Ohio Grindstone Company, of Cleveand, are now operating 13 large quarries of the celebrated Ohio sandstone with a force of 700 men. The company have recently taken orders for upward of 2000 tons of grindstones, and the entire production of the company is already sold for many months ahead.

KENTUCKY.

Pennsylvania Furnace blew out last week to put in a new Gantz rock hearth. Ashland Furnace is working splendidly, making over 50 tons of iron per day, using only raw coal for fuel.

Hunnewell Furnace is booming along as usual, making 18 tons of a superior grade of pig iron per day.

ILLINOIS.

The work at the Springfield watch fac-tory is constantly increasing. Beginning with next month it is expected that 300 watches will be finished each day.

The American Steam Engine Works, of

Chicago, are building a 50 horse-power engine to go to Houston, Tex.; one of the same power for the Hoyt & Bro. Mfg. Co., Aurora, Ill.; a 20 horse-power for Sterling, Ill., and a large number varying from 16 to 60 horse-power each for other parties and sections. They are full of orders for the

Should the present drought continue much longer, the output of coal from Schuylkill County will be considerably reduced below the quantity of coal which would be shipped the September pay-roll will reach the highest Two amount of any preceding month, and the City, names of over 2000 men will appear upon

that they will be able to turn out from 10 to 15 tons of shoes a day. They are a month behind orders.

broken on Saturday, Aug. 27.

The Carbon Rolling Mill, at Weissport, Carbon County, is about to resume work Chicago and Northwestern Railway with a

Pullman is rapidly being pushed toward completion. It is one of the largest buildings in the new city.

INDIANA.

The Indianapolis Rolling Mill Company are busily engaged in changing and leveling the site for the steam mill. The company has only to arch over the creek 200 feet from the Mississippi street culvert, to the

canal culvert, to make the most straining and is successfully used in the manufacture of horseshoe nails, rivets, wire, pressed japanned ware, &c. They are building four new furnaces, and find sale for all the iron they can produce.

PITTSBURGH AND VICINITY.

Phillips, Nimick & Co.'s Sligo mill will start up again this week.

Thomas Evans & Co.'s new chimney factory. on Eighteenth street, is rapidly aptory.

Southern States Coal, Iron and Land Com-

of the structure.

The Pittsburgh Locomotive Works, at Manchester, are running full time, and have more orders on hand than can be handled in the next six months.

Bryce, Walker & Co. are running full time, and their new furnace is working to perfection. Track is zero, fair. in operation, putting out 8000 bricks daily. These works have supplied linings and material for repairs of the following furnaces: Warner Furnace, Hickman County, Tenn.; the new stack building at Birmingham, Ala.; Woodstock Furnace, Round Mountain Fur-nace, Bibb Furnace, Alice Furnace, Birmtwo towns being row engaged in a struggle ingham, Ala. Their own stack, lined with to get the works within their respective boundries. Mr. Fortune will have assonant their coke ovens have been steadily used boundries. Mr. Fortune will have associated with him in this enterprise several prominent glass workers of the South Side.—
Fittsburgh Times.

Adams & Co. are running full time with all their furnaces, and are very busy on their various and extensive lines of table ware.

OHIO.

One of the oldest machine shops in the West is that of Duvall & Co., West Market street, Zanesville. Its history extends over half a century, and it has the honor of having kept in the van of successive improvements. Its engines—stationary, plantation half a century, and it has the honor of having kept in the van of successive improvements. Its engines—stationary, plantation and portable—are adapted to the most various requirements. Duvall & Co.'s saw mills and boilers hold a high and well established reputation.

Our Toledo correspondent writes: Heartley

Our Toledo correspondent writes: Heartley

Our Toledo correspondent writes: Heartley

Southern railroad companies. The company on some place of the contract for the construction of large chemical works for a company at Atlanta, Ga. Another department is the extensive and have orders for several hundreds from Southern railroad companies. The company one southern railroad companies at South Pitter. boilers hold a night and web station.

Our Toledo correspondent writes: Heartley & Dempsey, proprietors of the Toledo Spring Works, where the manufacture of children's carriage springs and axles and wagon springs is carried on on a large scale, are about placing in a lot of new machinery—a sign of increasing business.—Cleveland Trade Review.

The Pollock Furnace, at Brier Hill, has The Pollock Furnace, at Brier Hill, has the necessary conveniences and many of the luxuries of larger places. Their second stack will soon be ready to blow in the necessary of the necessary conveniences and many of the luxuries of larger places. been damped down for a few days in order that steam connections may be made with the new blast engine, built by the Cuyahoga Steam Furnace Company, of Cleveland. The spiegel furnace will be blown in as soon as the connections with the engine can be employees, and increase the output of pig iron about 100 tons daily. This company's operations have been conservative and marked by the strictest business integrity. Its venture was made on its own capital, no part of its property being bonded. It has done much toward demonstrating the capac-ity of the Southern field for the manufacture of good irons cheaply. The first move-ment was made in 1875, and the plant has all been put down since that time

MISSOURI.

A new organization has recently been incorporated in Missouri, with a paid-up capital of \$10,000, for the purpose of manufac-turing wringers. The corporation will be known as the Triumph Wringer Company, of St. Louis, of which C. H. Spencer is the president; A. T. Harlow, secretary, and E. H. Israel, manager. They expect to be prepared to supply the trade within a few weeks, and

to supply the trade within a few weeks, and guarantee the best of workmanship and material. Every machine will be thoroughly tested before leaving the factory.

We clip the following from the St. Louis Age of Steet, regarding the industries in that city: P. P. Manion shipped a car load of machinery to Texas on Wednesday. J. Boyer is building a machine shop on Batas street, between Collins and Broadway. D. Kerwin has just planted a fine steam hammer in his iron-working establishment on mer in his iron-working establishment on North Levee. The Missouri Car and Foundry Company are building 400 box and flat cars for the Gulf, Colorado & Santa Fe Railroad, The freight depot of the Missouri Pacific Railroad, at Poplar and Seventh streets, is to be illuminated with electric light. Work has been begun clearing away the debris of the Gage & Horton Stove Works, destroyed by fire on Sunday last, preparatory to re-building that establishment. The convert-ing department of the Vulcan Steel Works has been temporarily closed, pending some repairs, alterations and improvements being made there.

MICHIGAN.

The following table exhibits, in gross tons, the total lake shipments of iron ore the present season, up to and including Aug. 17, together with the amount shipped during

Where from. Escanaba	1880. 668.290	1881, 784, 152
MarquetteL'Anse	396,793	377.372 28,896
	. 005 490	1 101 600

Steel Works, and about \$110,000 was paid out to the men for the July work. Comquette Mining Journal.



COVERT MANUFACTURING COMPANY,



WATERVLIET ARSENAL, WEST TROY, N. Y., Nov. 9, 1880. The "Covert Snap" has been used in large quantities in the military service by our troops in the West, and has given great satisfaction, as far as known, to the Ordnauce Department.

P. V. HAGNER,

Brevet Brig.-General U. S. A., Col. of Ordnance

SOLE MANUFACTURERS OF

COVERT MANUFACTURING Co. -Gents. COVERT MANUFACTURING CO.—Gents:
Having used your Breast Chains sent here for trial, to be paid for if they proved satisfactory, I would say that they have given perfect satisfaction, and as they cost one-half less and will last much longer than straps, we wish to settle for same, and shall continue to buy and use them in place of straps.

We have used your Harness Snaps a long time, and have adopted them as being the best in the market.

Yours truly,

HORACE DENNETT,

Supt. Knickerbocker Ice Co.



CHICAGO, ILL., Sept. 10, 1878 COVERT MANUFACTURING Co.—Gents: COVERT MANUFACTURING CO.—Gents:
Your inquiry in regard to the Snaps
sold us some two years since, we cheerfully say they proved to be the best we
have ever used, and we have bought no
other kind since, but have been buying
your goods of jobbers here, and have
told them when they get them thoroughhy introduced they would not need to ly introduced they would not need to carry any other kind. We are satisfied no one having used them will buy any other. Yours respectfully,

M. W. SQUIRES,
Supt. North Chicago City R. R. Co.

COVERT'S

PATENT HARNESS SNAPS.

CHAIN AND

ROPE HALTERS, HORSE AND

These goods are sold by all leading jobbers in General and Saddlery Hardware, and the same discounts given from the list to the trade as when purchased direct

ROPE GOODS

CATTLE TIES, HALTER LEADS, &c.

All Manufactured by Machinery, and are the Best and Cheapest in the World.

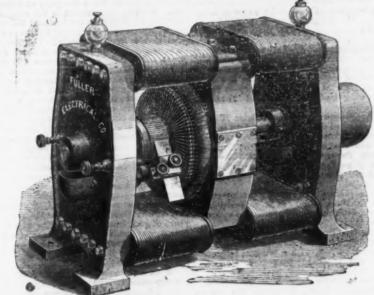
SEND FOR ILLUSTRATED CATALOGUE AND PRICE LIST.

COVERT MANUFACTURING CO.,

West Troy, N. Y.



ELECTRIC LIGHT.



THE FULLER ELECTRICAL COMPANY, having perfected their system of Electric

and requires less attention than any other.

Lighting, are prepared to furnish the Improved Gramme Dynamo Electric Machines and Electric Lamps, either for single lights or for from 2 to 20 lights in one circuit. is unexcelled for durability, steadiness of light and economy of power,

THE FULLER ELECTRICAL COMPANY, 44 East Fourteenth Street, NEW YORK.



NEW DESIGN.

Cast Brass Padlocks, with or without Tinned Iron Chain or Nickel Plating. Awarded "First Order of Merit" at the International Exhibition at Melbourne,

Keys will not pass unless so made to order. The most secure, most durable and cheapest Padlock extant. Master-Keyed Padlocks to order in sets of any number re-

New price lists ready.

D. K. Miller Lock Company

821 Cherry Street,

PHILADELPHIA, PA

The Iron-Masters'

Exclusively for the

Analysis of Ores of Iron, Pig and Manufac-tured Iron, Steels, Limestone, Clays, Slags and Coal for Practical Metallurgical Purposes.

No. 339 Walnut St., Philadelphia. With Branch at Warrenton, Virginia,

J. BLODGET BRITTON.

This laboratory was established in 1866, at the instance of a number of practical Iron Masters, expressly to afford prompt and reliable information upon the chemical composition of the substances above mentioned, for smelting and refining purposes. The object being to make it at once a convenient, practically useful, and comparatively inexpensive adjunct to the Furnace, Forge and Rolling Mill.

CHARGES TO IRON WORKS.

currence or unusual occurrence or difficult to determine, the charge must necessarily depend upon circumstances. For determining the per cent. of Sulphur or Phosphorus in Iron or Steel.

currense. 6.00
For the per cent, of Carbonate of Lime, and insoluble Silicious Matter is a Limestone. 10.00 or each additional constituent. 2.00 er the per cent of Water, Volatile Combustible Matter, fixed Carbon, and Ash in Coal. 12.50 For determining the constituents of a Clay, Slag, Coke, or of an Ash in Coal the charges will corresuond with those for the constituents of an ore. For a written opinion or letter of instruction the charge must necessarily depend upon circumstructures.

stances. Printed instructions for obtaining proper average samples for analysis furnished upon application

FRASSE & CO.,
Importers of
PETER STW ST SIGHT STEEL
WIRE, TOOLS, FILES AND
BAR STEEL
Send for Price List. P. C. Box 4627.
62 Chatham St. N. Y.

LIGHTNING

WEYMOUTH'S PATENT.



This knife is the best in use for cutting down hay and straw in mow and stack, cutting fine feed from bale, cutting corn stalks for feed, cutting peat and ditching marshes.

The blade is best cast steel, spring temper, easily sharpened, and is giving universal satisfaction. A few moments' trial will show its merits, and parties once using it are unwilling to do without it. Its sales are fast increasing for exports as well as home trade, and it seems destined to take the place of all other Hay Knives.

They are nicely packed in boxes, one dozen each of 50 pounds weight, suitable for shipping by land or water to any part of the world.

MANUFACTURED ONLY BY

HIRAM HOLT & CO.,

East Wilton, Franklin Co., Maine.

THE FRENTRESS STEEL



ST. LOUIS WIRE FENCE CO., The Frentress Barb Wire Fence Co., 814 & 816 N. Second St., St. Louis, Mo.



INDIANAPOLIS, IND. .

DE-OXYDIZED BRONZE.

DE-OXYDIZED BRONZE (patented) is an alloy of LAKE COPPER and best ASIATIC TIN in any proportion required, so as to be either as ductile as copper, as tough as iron, or as hard as steel, according to the proportion of Copper and Tin used.

The process of making the alloy is what constitutes its superiority over any other known alloy of Copper and Tin or any other Bronze composition. The castings made from this metal, owing to its perfect fluidity when melted, possess great density, perfect soundness and homogeneity. Unlike certain bronze and other compositions, it can be handled without the least difficulty by any ordinary founder, as it flows like oil in pouring.

Thus the necessity and trouble of shipping patterns, the delay in receiving castings and the expense of the double charges of freight or express, such as attend the obtaining, in many cases, of Phosphor Bronze, are entirely avoided by ordering D. O. B. in ingots. Where this metal has superseded other compositions of similar character, it has endured three times as long. In a word, we claim that De-Oxydized Bronze not only has none of the objectionable features attributed to similar compositions, but that it possesses all their good qualities in addition to its own merits, and advantages peculiar to itself, such as the following summary will make clear:

- 1. ITS CREAT CONVENIENCE IN HANDLING as compared to Phosphor Bronze.
- 2. We claim for it SUPERIOR ANTI-FRICTION QUALITIES to any other known Brass or Bronze.
- 3. CREAT MALLEABILITY AND TENACITY.
- 4. Its homogeneousness and smoothness of surface render it capable of the HICHEST POLISH.
- 5. As before mentioned, we claim for it UNEQUALED ENDURANCE.
- 6. We claim that JOURNALS MADE of D. O. B. REQUIRE ONE-FOURTH LESS LUBRICAT-INC MATERIAL than any other composition yet known.

Finally, this metal has never failed to give more than satisfaction wherever used. To sustain our statements. the following testimonials will suffice:

Henry Disston & Sons, Saw, Tool. Steel and File Works, Front and Laurel Streets, you continue to make it the same quality, we shall use no other metal in our Engine Boxes. We therefore take pleasure in recommending it to Engine Builders in general.

Philadelphia Smelting Company, City:

Yours respectfully,

HOFF, FONTAINE & ABBOTT.

Philadelphia Smelting Company, City:

Gentlemen: After a trial of eighteen months of your "De-Oxydized Bronze" as Journal Boxes in our Rolling Mill, where great pressure is required we take pleasure in recommending it as being superior to any we have heretofore used. Very truly,

Office of Eagle 1ron Works, 1162 North Third Street,

Philadelphia Smelting Company, Limited, Twelfth and Noble Streets, Philadelphia, Pa.:

Dear Shb: In reply to your inquiry of yesterday as to our opinion of "De-Oxydized Bronze" for Railway Coach Trimmings, I beg to submit that we have used it up to present writing for the trimming of something over 100 coaches. One marked peculiarity of this metal, when highly finished, is non-liabilit to abrasion, and over 100 coaches. One marked peculiarity of this metal, when highly finished, is non-liability with the gases of the atmosphere, which in embossed work is a great desi fera un. To those Bronze" for over a year, and here to over a

This metal is used for the following purposes, and we can refer to large concerns in addition to above, through the New England and Middle and Western States, who are using it in preference to any other.

- 1. Engine, Car and Machinery Journals.
- 2. Pumps, Valves and Linings, Cylinders, Pinions, Cogs, Plungers, Crank Pins, &c.

3. Car Trimmings, Harness and Coach Furniture, House Hardware, Steam Fittings, &c. 4. Wire, Sheets, Rods and Tubes.

And for any other purpose that a handsome, durable and sound Bronze is required. We especially commend it to Railroad Companies, Car Builders, Machinists, Engineers and others requiring a Journal Metal that will stand the severest friction and the heaviest pressure.

Manufactured and for sale in Ingots and Castings by the

PHILADELPHIA SMELTING COMPANY, Limited,

S. E. COR. TWELFTH AND NOBLE STS., PHILADELPHIA, PA., U. S. A.

Our Genuine Babbitt is superior to all other makes in the market in every particular. We guarantee it to be perfect in its Anti-friction qualities in machinery AT A SPEED OF 10,000 PER MINUTE, or at 1000 TONS PRESSURE for 10 YEARS. We append below testimonials from A1 houses justifying us in the above claims.

New Haven, Conn., April 11, 1881.

We have used your "Genuine Babbitt" about 4 We have used your "Genuine Babbitt" about 5 We have used your "Genuine Babbitt" about 6 We have used your "Genuine Babbitt" about 6 We have used your "Genuine Babbitt" about 7 We have used your "Genuine Babbitt" about 8 We have used your "Genuine Babbitt" about 6 We have used your "Genuine Babbitt" about 7 We have used your "Genuine Babbitt" about 8 We have used your "Genuine Babbitt" about 9 We have used your "Genuine Babbitt" about 6 We have used your "Genuine Babbitt" about 6 We have used your "Genuine Babbitt" about 7 We have used your "Genuine Babbitt" about 6 We have used your "Genuine Babbitt" about 6 We have used your "Genuine Babbitt" we have bought from your gives perfect satisfaction in our Stone Breaker with excellent results, and 8 We have used your "Genuine Babbitt" we have bought from your gives perfect satisfaction in our Stone Breaker working in bearings 12, 1832.

The "Genuine Babbitt" we have bought from your goots of Wood Working Machinnery Co., Annonia, Conn., Aug. 17, 1832.

The "Genuine Babbitt" we have bought from your gives perfect satisfaction in our Stone Breaker working in bearings 12, 1832.

The "Genuine Babbitt" we have bought from your goots of Wood Working in Bacting 12, 1832.

The "Genuine Babbitt" we have bought from your goots 12, 1832.

The "Genuine Babbitt" we have bought from your goots 12, 1

From this it will be seen that it can have no superior, or even equal, as an Anti-Friction Metal in anything manufactured. We make besides all grades of Anti-Friction Metals.

Letter A, Guaranteed at a speed of 2000. Letter D, Used for Shafting.

Letter B, Guaranteed at a speed of 1000. Letter E, Used for Ag'l Implements, &c.

Letter C, Guaranteed at a speed of 800. Letter A L, For slow speed.

All our Metals are made from best Lake Copper, Asiatic Tin, Cookson's Antimony and best Refined Lead, and in all cases run free at melting heat, without drossing, and without any necessity for heating the journals into which they are poured.

MANUFACTURERS' AND MACHINISTS' NAME PLATES,

REAL BRONZE, FINISHED. Patterns from \$3 upwards, according to Size and Style. Plates, \$3 per dozen and upward, according to Size and Style. SKETCHES FURNISHED FOR APPROVAL BEFORE MAKING PATTERNS.

We have a specialty in this line and produce a handsomer plate, at less money, than can be obtained elsewhere. ART AND ECCLESIASTICAL METAL WORK IN BRASS AND BRONZE GAS FIXTURES, ALTAR CANDLESTICKS, SANCTUARY LAMPS, CHANCEL RAILS, PULPITS, &c.

PHILADELPHIA SMELTING COMPANY, Limited,

S. E. COR. TWELFTH AND NOBLE STREETS, PHILADELPHIA, PA.

Red Lights for Hotel Passages,-The St. Nicholas Hotel, New York, has adopted a feature which is in use in many Western hotels. This is the introduction of red lights notels. This is the introduction of red lights in the halls. Firemen say that the greatest difficulty guests experience in a burning building is in finding their way to the stairways. The passages are frequently long and tortuous, and even one quite familiar with their windings is apt to go wrong under the influence of any sudden excitement. For this reason the St. Nicholas has placed red globes on the fixtures in the halls that lead to the staircase, and white lights in those that do not. A stranger can open his door at any hour of the night, and by running along the row of red lights reach the stairs in the shortest possible time.

A movement is in progress to form a com bination of oil refiners not under the control of the Standard Oil Company. Two meet-ings of the outside refiners, as they are termed, have recently been held in Pitta-burgh and a third last week at Cleveland, when an organization was effected. The Standard Company seems to be losing its power. A short time ago it held a rod of power. A short time ago it held a rod of terror over the trunk lines of railroad and compelled them to do its bidding, give it such rates for transportation as it demanded and charge outside refineries an extortionate rate. Now the railroads, with the exception of the Louisville and Nashville, have found the courage to refuse their demands and to agree to rut all refiners on the same and to agree to put all refiners on the same footing. At one time, we believe, all but one or two refineries in the country were controlled by the Standard. Now, of the 50,000 barrels of crude oil refined daily in the United States fully one-third is the product of refineries not controlled in any way by the Standard. In Philadelphia a large "outside" refinery is under way. Cleveland, one of the Standard's strongholds, contains eight independent refineries, Pitts-burgh three, Franklin two, Buffalo two, Oil City two, Titusville two, Chester, Pa., one, and Bayonne, N. J., one. It must not be supposed that the Standard will submit without a struggle. It is too strong.

It is noticed that the outgoing steamers for Europe are taking a great variety of manufactured articles, such as machinery, revolvers, dental chairs, hardware, organs, stationery, furniture, pumps, agricultural implements, casings, photo goods, cutlery, drugs, crucibles, &c.

A German inventor, Erichson, is bringing out a machine for rolling instead of tapping bolts and large screws, and it is stated that he has been quite successful with his new method, the chief characteristic of which is that no material is removed by cutting.

Special Notices.

SECOND-HAND AND NEW MACHINERY.

SECOND-HAND AND NEW MACHINERY.

September, 1881.

The following New and Improved Machinists'
Tools, for future delivery:

§ 15-in. awing x & ft. Screw Cutting Lathes. Sept. 10.

5 15-in. swing x & ft. Screw Cutting Lathes. Sept. 10.

2 15-in. awing x & ft. Screw Cutting Lathes. Sept. 10.

2 15-in. awing x & ft. Screw Cutting Lathes. Sept. 10.

2 15-in. brills, back gaared and self feed. Sept. 10.

3 15-in. Drills, back gaared and self feed. Sept. 10.

3 15-in. Drills, back gaared and self feed. Sept. 10.

3 15-in. Drills, back gaared and self feed. Sept. 10.

1 15-in. Drills, back gaared and self feed. Sept. 10.

2 15-in. brills, back gaared and self feed. Sept. 10.

3 15-in. Drills, back gaared and self feed. Sept. 10.

1 15-in. Drills, back gaared and self feed. Sept. 10.

1 15-in. brills, back gaared and self feed. Sept. 10.

2 Engine Lathe, 2: in. swing, 10 ft. bed. Second hand.

2 Engine Lathe, 2: in. swing, 10 ft. bed. Second hand.

2 Engine Lathe, 2: in. swing, 10 ft. bed. Second hand.

1 13-in. swing, 7½ it. bed, Screw-Cutting Lathe. New.

1 13-in. swing, 7½ it. bed, Screw-Cutting Lathe. Sec'd hnd.

1 13-in. swing, 7½ it. bed, Screw-Cutting Lathe. Sec'd hnd.

1 13-in. swing, 5 ft. bed, Screw-Cutting Lathe. Sec'd hnd.

2 13-in. swing, 5 ft. bed, Screw-Cutting Lathe. Sec'd hnd.

4 Foot Lathes, 4 in. to 9 in. swing. Second hand.

4 Foot Lathes, 4 in. to 9 in. swing. Second hand.

5 Guare Arbor Lathes. Am. Tool Mch. Co.'s make.

5 Guare Arbor Lathes. Am. Tool Mch. Co. 's make.

5 Guare Arbor Lathes. Am. Tool Mch. Co. 's make.

1 Scinle Second-hand.

1 9 ft. x 2 in. Tron Planer. Second-hand.

1 7 ft. Staling Machine, Coll make. New.

4 Spindle Drill, heavy. Second-hand.

1 9 in. Shaping Machine, Heavy. Second-hand.

2 ft. Spinle Drill, heavy. Second-hand.

2 Manhattan Arms Co. Millers. Second-hand.

2 Manhattan Arms Co. Millers. Second-hand.

Fratt & Whitney Cam Cutter, 2 heads. Second-hand, Milling Machines, Lincoln pattern. Second-hand, Milling Machine, Second-hand. Fond index Milling Machine, Second-hand. Fond is Double Milling Machine. Second-hand. Fonds Double Milling Machine. Second-hand. Garvin Milling Machine. Second-hand. Garvin Milling Machine. Second-hand. Gur But Milling Machine. Second-hand. Second-hand. Second-hand. Second-hand. Second-hand. Second-hand. Second-hand. Second-hand. Fonding Machines. Second-hand. i Cock Grinding Machine, Second-hand.

1 Vertical Centering Machine, Recond-hand.

2 Belt Folishing Machine, Second-hand.

2 Schlenker Bolt Cutter, Second-hand.

3 Follenker Bolt Cutter, Second-hand.

2 Fine Cutting Machine. Second-hand.

3 Fulley Forlishing Machine. Second-hand.

4 Fulley Forlishing Machine. Second-hand.

3 Fulley Forling Machine. Second-hand.

4 Forling Machine. Second-hand.

5 Fulley Forling Machine. Second-hand.

5 Fulley Forling Machine. Second-hand.

6 Forling Back 15½ in. diam., Self-feed. 2d-hand.

1 Horizontal Forling Machine. Second-hand.

1 Horizontal Forling Machine. Second-hand.

7 Forling Machine. Second-hand.

8 Forling Machine. Second-hand.

8 Fulley Forling Machine. Second-hand.

1 Bolter Flate Fower Funch. Second-hand.

1 Bolter Flate Fower Funch. Second-hand.

2 Bolter Flate Fower Funch. Second-hand.

3 Forling Forling Fresses, No. 3, nearly new.

4 Eingle-Acting Fresses, For power, nearly new.

5 Eingle-Acting Fresses, For power, nearly new.

4 Eingle-Acting Fresses, For power, nearly new.

5 Eingle-Acting Fresses, Second-hand.

1 Foot tunch, with bench. New.

1 Taft's Fower Shear, 4 in. blade, nearly new.

2 Grind Stones and Frames. Second-hand.

1 Foot tunch, with bench. New.

1 Taft's Fower Shear, 4 in. blade, nearly new.

2 Grind Stones and Frames. Second-hand.

1 Foot punch, with bench. New.

1 Taft's Fower Shear, 4 in. blade, nearly new.

2 Grind Stones and Frames. Second-hand.

1 For Rattling Mill. Second-hand.

1 For Rattling Mill. Second-hand.

1 Randers Fower Roller. Second-hand.

2 Well-Fower Roller. Second-hand.

2 Well-Fower Roller. Second-hand.

3 Well-Fower Roller. Second-hand.

4 Well-Fower Roller. Second-hand.

5 Well-Fower Roller. Second-hand.

6 Well-Fower Roller. Second-hand.

1 Roll Roller. Second-hand.

1 Roll Roller. Second-hand.

2 Well-Fower Roller. Second-hand.

2 Well-Fower Roller. Second-hand.

2 Well-Fower Roller. Second-hand.

2 Well

THE GEORGE PLACE MACHINERY AGENCY. 131 Chambers and 103 Reads Sts., New York.

HAVE YOU READ THIS? JENNINGS' DISCOUNT TABLES.

JENNINGS* DISCOUNT TABLES.

'15 to 8 x and all the combinations.

We not them correct and wonderfully "labor savings"—Sargenium, New York.

New York.

"Saving of the correct and wonderfully "labor savings"—Sargenium tables are all you claim for them."

We will the saving the first work of the correct of t

SITUATION WANTED—By a first-class black-smith, as foreman in a locomotive or car shop. Address, 2306 Ingersoll St., Philadelphia, Pa.

Special Notices.

THE PAINT CREEK MINING PROPERTIES

Of Kanawha County, West Firginia.

ISAAC N. SMITH, Solicitor, Charleston, Kan. Co., W. Va. OSCAR A. VEAZEY, Engineer, Paint Creek, Kan. Co., W. Va.

Taint Creek, Kan. Co., W. Va.

These companies have been organized for the development of the valuable coal lands owned by them. They are now constructing a first-class railway through the properties, having its terminus in the pool above Lock and Dam No. 3, part of the improvement on wheing constructed by the United States Government on the Kanawha River. This railway will be completed and equipped for transportation of coal in September, 1861. It crosses the C. & O. R. R. and connects with it, so that shippers will have every facility for river and railway trade. The companies are prepared to make leases to river and rail upon the companies of the companies o

able scams, the principal Splint Coat Scam and able scams, the free.

Iten feet.

Iten feet.

More particular information given upon request by mail or otherwise to L. L. Conned, President, 1s. Lexington street, Baltimore, or Isaac N. Smith, Charleston, Kanawha County, W. Va., Solicitor of the companies.

Second-Hand & New Machinists' Tools.

In Store Aug. 3, 1881.

Two Car Axie Lathes. Hewes & Phillips. New. One 56 in. x 13 ft. Horizontal Boring Lathe. Fond. One Engine Lathe, 56 in. x 18 ft. Futnam. One Engine Lathe, 56 in. x 18 ft. Futnam. One Engine Lathe, 56 in. x 18 ft. Futnam. One Engine Lathe, 36 in. x 18 ft. Futnam. One Engine Lathe, 36 in. x 18 ft. Ames. New. One Engine Lathe, 30 in. x 16 ft. New Haven. One Engine Lathe, 29 in. x 16 ft. New Haven. One Engine Lathe, 29 in. x 16 ft. New Haven. One Engine Lathe, 20 in. x 20 ft. Putnam. New. One Engine Lathe, 20 in. x 20 ft. Putnam. New. One Engine Lathe, 20 in. x 20 ft. Ames. New. One Engine Lathe, 20 in. x 8 ft. Almes. New. One Engine Lathe, 18 in x 9 ft. Ames. New. One Engine Lathe, 18 in x 8 ft. Almes. New. One Engine Lathe, 19 in. x 8 ft. Michel. One Engine Lathe, 19 in. x 8 ft. Michel. One Engine Lathe, 19 in. x 6 ft. Michel. One Engine Lathe, 19 in. x 6 ft. Michel. One Engine Lathe, 19 in. x 6 ft. Michel. One Engine Lathe, 19 in. x 6 ft. Michel. One Engine Lathe, 19 in. x 6 ft. Michel. One Engine Lathe, 19 in. x 6 ft. Michel. One Engine Lathe, 19 in. x 6 ft. Michel. One Engine Lathe, 19 in. x 6 ft. Michel. One Engine Lathe, 19 in. x 6 ft. Michel. One Engine Lathe, 19 in. x 6 ft. Michel. One Engine Lathe, 19 in. x 6 ft. Michel. One 5 in. Upright Drill. Hounday Sharp. New. Two Sensitive Drill. Poundings Bk. Geared. One 5 in. Upright Drill. Hounday Sharp. New. One 26 in. Upright Drill. Hounday Sharp. New. Two Index Millers. Pound. One 10 in. x 5 ft. Ft. Fox Lathe. New. Eq. action. Two Gould Bulling Machines. One No. 2 Fratt & Whitney Miller. One 6 in. Lyft hourday Sharp. Hendey Machine Co. New. One 11 in. x 5 ft. Planer. Hewe & Phillips. New. One 21 in. x 5 ft. Planer. Hendey Machine. One 22 in. x 15 ft. Planer. Hendey Machine. One 23 in. x 15 ft. Planer. Hendey Machine. One 24 in. x 15 t. Planer. Hendey Machine. One 25 in. x 15 ft. Planer. Hendey Machine. One 25 in. x 15 ft. Planer. Hendey Machine. One 25 in. x 25 ft. Planer. Hendey Machine. One 25 in. x 25 ft. Planer. Hendey Machine. One In Store Aug. 3, 1881.

E. P. BULLARD, 14 Dey St., New York, GENERAL EASTERN AGENT FOR

Akron Iron Co.'s Hot Polished Shafting.

Foreman Wanted

in small jobbing and manufacturing machin

Address, giving age, experience, reference, sal-

ary and full particulars, Office of The Iron Age, 220 S. 4th St., Phila., Pa

Vertical Boring and Turning Mill Wanted,

new or second hand, to swing 6 to 8 feet. State maker, time of delivery, price, age, condition and where it can be seen. Address. STOKES & PARRISH, 30th and Chestnut sts., Philadelphia

Wanted.

A Steam Hammer, 300 to 500 lbs., in good order, to be delivered at once. State the in Jersey City. Doing an excellent business. maker, how much used, and lowest cash price. Box 619, Providence, R. L.

Wanted.

Situation by a Blast Furnace Manager and Engineer used to the manufacture of Spiegel, Cleveland and Bessemer Pig: has put up considerable new work, and can furnish first-class testimonials from some of the leading ironmasters in England. Address, FURNACE MANAGER, Address, FURNACE MANAGER, Office of The Iron Age, 83 Reade St., New York.

Wanted.

To arrange with responsible parties having proper facilities and experience for the manufacture of some improved wood-working machinery, destined to meet extensive sales when thoroughly introduced. For further particulars, address B. H.,

Office of The Iron Age, 83 Reade St., New York. WANTED.—A position as Buyer or Clerk in a Hardware House. Well posted in General Hardware. Address BOffice of The Iron Age, 83 Reade St., New York.

MACHINIST, Engineer and Steam Fitter, and fair hand at Pattern Making and Mechanical Drawing, wants a situation (middle of September) with a manufacturing firm where there is opportunity for advancement.

J. W. F.,

Daretown, Salem Co., N. J.

SITUATION WANTED—TINNER—By one with ten years' experience at the Tinner's trade; would like a steady situation as such. For further particulars, address W. T. WARSOP, 195 Dodge St., Cleveland, O.; or 48 E. 6th St., Oswego, N. Y.

Special Notices.

Rolling Mill for Sale or to Lease.

The Real Estate, Machinery, Fixtures and Tools of the Ligonia Iron Company (formerly Portland Rolling Mills) are offered for sale, or will be leased to satisfactory parties.

The property of the company consists of 69 acres of land at tide-water in the town of Cape Elizabeth, Cumberland Co., within ten minutes' drive of the city of Portland. Besides the mill buildings, the company owns 55 tenements in 28 buildings, one hall used for church purposes, two stores and a thoroughly well-fitted office, with fire-proof vault and all modern improvements. The buildings are in good repair.

and an modern maps and an arrange as in good repair.

The Mill contains one to-inch train and one reinch train, with all the machinery apperbaining for the manufacture of rails and bar iron. With a small additional outlay the machinery could be fitted for rolling steel rails from imported blooms, the capacity of the mill being about 25,000 tons per arrange.

annum.

The property is provided with a thoroughly built wharf, at which vessels of 800 tons capacity can lie at low water, and being directly connected by rail with all the railroads centering at Portland, is probably the most desirable situation for the manufacture of steel rails in New England. Address LIGONIA IRON CO. LIGONIA IRON CO.,

Portland, Maine.

New and Second-Hand MACHINERY.

One Horizontal Engine, 15½ in.x30 in. Todd & Rafferty.
One Horizontal Engine, 3 in.x6 in.
One Beam Corliss Engine, 30 H. P.
Portable Engines from 10 to 25 H. P.
Two Horizontal Return Tub. Bollers, 100 h. p. each.
One Hor. Tubular Bollers, 6 ft x14 ft. 67 4 in. tubes.
Two Hor. Tub. Bollers, 4/5 ft.x13½ ft., 43 4 in. tubes.
One Locomotive Steel Boller, 30 h. p.

MACHINISTS' TOOLS.

Twelve Lathes, 22 x 12. New.
Ten Lathes, 18 x 6. New.
Ten Lathes, 18 x 6. New.
One Cameron Pump, No. 2.
One Styles & Parker Foot Press.
One Root Gas Exhaus' er, No. %.
One Planer, 24 in. x 8 t b. Pond.
Two ro-in. Shaping Mo hines.
One Milling Machine. Wood & Laght.
One Tapping Machine, 6 in. Saunders' Sons.
One Tapping Machine, 6 in. Saunders' Sons.
One Hydraulie Press, 8 inch ram.
One 30-ton Hydraulie Press and Pump
One Knowles Special Pump, No. 7.
One Bliss & Williams Foot Press.
One Peck, Stow & Wilcox Foot Press.
One Peck, Stow & Wilcox Foot Press.
A large stock of Shafting. Pulleys, Hangers and
Miscellaneous Machinery,
One Upright Drill, 36 inch.
One Burleigh Rock Drill, No. 4. New.
One Hotchkiss Compressed Air Hainmer.
Fifty Wrought Iron Vises, all sizes.
One Daniels Planing Machine.
Three pair Fairbanks' Scales, 3500 lbs. each.
One Pipe Cutting Machine.
One pair Paper Rolls.

J. GRAY'S MACHINERY DEPOT 37 Dey Street, New York, U. S. A.

NOTICE!

SPECIAL SALE OF

CUTLERY.

SEE ADVERTISEMENT ON PAGE 16

BRADFORD & ANTHONY, Boston.

Notice.

The undersigned firm would be pleased to accept the representation of first-class firms manufactur-ing machinery. Address. ing machinery. Address. J. S. LIZARS & CO.,
Manufacturers of Shilds & Lizars Food Water
Heater and Purifier, and dealers in New and Second-hand Machinery, 13 Fifth Avenue, cor. Lake
street, Chicago, Ill.

For Sale.

Two Corliss Condensing Beam Engines,

32 in. x 72 in. cylinders. Address, THE HARTFORD ENGINEERING CO., Hartford, Conn.

For Sale.

Stock of Hardware, Fixtures, and Good Will of the subscribers, in the city of Norwich, Conn. Only one other hardware store. Population

FULLER & PARISH. August 1, 1881.

For Sale.

A Hardware and Tool Store on reasonable terms. Probably the most desirable Inquire of H. LUTTGEN.

For Sale.

Hardware Stock and Trade in Michigan. Those wishing to buy a complete stock and fine trade, and in a beautiful place to live, will find a rare chance by addressing S.,
Office of The Iron Age, S3 Reade St., New York.

For Sale.

Wishing to make a change, I offer for sale my entire stock of Hardware, Iron, Steel, Paints and Oils. Trade well established and doing a large and profitable business. Will be sold at a sacrifice to close out. lose out.
Address for full particulars,
H. A. AYER, Dexter, Maine.

For Sale.

Gartsherrie, No. z. Eglinton, No. 1. Eglinton, No. 3. Middlesboro, No. 3. EDWARD J. ETTING,

230 South Third street, Philadelphia. Sanderson Bros. Steel Co.

Forty shares for sale at a discount.

EDWARD FRITH & SON,

241 Poarl street, New York.

Special Notices.

NUT AND BOLT MACHINERY For Sale.

Second-hand Lewis, Oliver & Phillips Header.

Pratt & Whitney Tire Blank Header.
Also, over ONE HUNDRED different sizes and patterns of Bolt Cutters, Tappers, Nut

The only Specialists in this line in the United Patentees and owners of the celebrated National

NATIONAL MACHINERY CO., Cleveland, O.

For Sale.

The Little Schuylkill Rolling Mill,

at Milldale, Schuylkill County, Pa., near Port Clinton, on the line of the Philadelphia and Reading Railroad, consisting of a Merchant Bar Mill in complete running order, with a splendid water power sufficient to run the mill two-thirds of the year. Engines, Boilers, Foundry and Machine Shop, with Lathe for turning rolls, and all other appurtenances necessary to commence operation at once. Together with dwellings, stables and large tract of land, to be sold low if applied for soon. For further particulars address or apply to

J. O. RICHARDSON, No. 232 Dock street, Philadelphia.

FOR SALE. Machinery in Store. One 8 in, swing Drill Lathes , ft. bed, hollow

One 3 in. swing Drill Lathes 4 ft. bed, hollow spindles.
One 4 x 6 Vertical Engine.
One 5 x 12 Portable Engine and Boiler.
One 5 x 12 Portable Engine and Boiler.
Two 3 x 12 Stationary Engines.
One 35 x 12 Stationary Engine.
Three 2 x 12 Stationary Engines, link motion, suitable for hoisting purposes.
One Cooper Steam Pump, 3 in. steam, 4 in. water, 14 in. stroke. The above are all second hand, refitted, and will be closed out cheap.
Wood-working Machinery, Knowles' Steam Pumps, Fan and Cupola Blowers, Exhaust Fans, Centrifugal Pumps, Harrington's Screw Hoists.
Emery Gcod: and manufacturers' supplies. The celebrated PHCENIX STEAM ENGINES, 15 to 50 horse-power. Second to none, and 20 per cent. cheaper than any others.

I. H. PRATT, 15 S. Water St., Cleveland, O.

NOTICE.

TO THE HARDWARE TRADE, Retail and Wholesale.

Before buying, send to me for quotations. Will give special figures lower than market rates on a large line of Shelf Hardware and

A. W. WHEELER, 141 Lake St., Chicago.

DU PUY'S DIRECT PROCESS

Reduces ore pudding beating furnace, force cinder, iron and steel scale and hammer slag, squeezed and rolled to bars at one heat. Blooms of iso blo, mage in one hour from force cinder, yielding is lia, out of to lbs. of cinder. It eliminates phosphorus, producing superior metal at low cost for crucible or open hearth steel. The furnace is an ordinary reverberatory with slight modifications.

CHARLES M. DU PUY,

No. 14 North Fifth Street, Philadelphia.

PROPOSALS FOR ORDNANCE SUPPLIES.

ROCK ISLAND ARSENAL, ILL., July \$6, 1881.

SEALED PROPOSALS will be received at this Arsenal, until 1s o'clock noon, September 5th, 1881, for supplying Leather, Webbing, Thread, Rivets and Burs, Sorews, Nails, Tacks, Metals, Lumber, Heating, Cleaning and Lighting Materials, Paints, Oils, Spirits, Saddler's Tools, &c., required during the fiscal year ending June 30, 1892.

Specifications containing detailed information of the conditions, and kind and quantity of the various articles, with form of bid, will be furnished on application to the undersigned. The United States reserves the right to reject any or all proposals' Biddersare invited to be present at the opening of bids.

D. W. FLAGLER, Major of Ordnance, Com'dg.

The Sherman Process Co.

9 Pemberton Square, Boston, Mass. Issue Licenses to use the Process for the Manufacture of Iron and Steel

In the Bessemer Converter, Crucible, Siemens Martin, Puddling, Blast and Cupola Furnaces.

The use of this Process improves the quality of the product, saves fuel and fabor, and does not require any change in furnace or manner of working See page 17 of The Iron Age of Oct. 25th, 1877.

STEEL:

STEEL:
Its History, Manufacture, Properties, and Uses.

By J. S. JEANS,

Secretary of the Iron and Steel Institute.

Section I. History of Steel; Chap. I. History of Steel; 2 Early History in England; 3. Progress of Invention; 4. History of Bessemer Process; 5. Stemens-Martin Process; 5. Other Steel-making Processes; 7. Steel in America; 8. Germany; 9. Frânce; 10. Austria; 11. Russia; 12. Sweden; 13. Other Countries.—Section II. Manufacture of Steel: Chap. 14. Comentation and other Methods; 15. Manufacture by Hessen Process; 16. Steel Chap. 18. Phosphorus in Steel; 19. The Use of Manganese; 20. Spiegeleisen; 21. Sulphur in Steel; 22. Silicon iu Steel; 23. Tensile Strength of Steel; 24. Mechanical Tests of Steel; 25. Analysis of Steel. Section IV. Uses of Steel; 25. Analysis of Steel, Section IV. Uses of Steel; 27. To Shipbuilding; 28. Yo Fridge Building; 29. To General Purposes; 30. Guns and Armor Plaise; 31. Other Purposes.

Price. Processing Processing Process. Section Process: 10. Section Process; 30. Guns and Armor Plaise; 31. Other Purposes.

DAVID WILLIAMS, 83 Reade Street, . New York.

Bissell & Welles, Wholesale Hardware Auctioneers

83 Chambers and 65 Reade Sts., N. Y. Sales held weekly for the trade. Consignments solicited. We refer to the leading Manutacturers and importers.

HEAVY IRON WORKS WANTED.

An Eastern Manufacturing Company, doing a profit able business in heavy wrought iron structures, the manufacture and sale of which they control for the United States and Canada, wish to establish additional work, located in the West. South, Pacific Coast and Province of Unitario. Must have first-class freight advantages for receiving rolled structural and mer chant iron. Address

WM. O. DOUGLAS, Binghamton, N. Y.

Special Notices.

JOB LOT.

ELEY BROTHERS' GENUINE BLUE CARTRIDGE CASES.

Twelve Gauge.

The best paper shell in the market. For sal cheap. Supply limited.

ALFRED FIELD & CO., 93 Chambers St., N. Y.

MACHINERY ON HAND For Sale.

One Horisontal Slide-Valve, Center-Crank, 15-Horse ENGINE (8 x 12); good as new, with Pulley and Fly-Wheel; has double-link motion; can be run in either direction. Price, \$300.

One Horison al Slide-Valve, Center-Crank, 15-Horse ENGINE (8 x 12), with Pump, Heater, Pulley and Fly-Wheel, in good repair. Price, \$175.

One Horisontal Slide-Valve, Side-Crank, 25-Horse ENGINE, with 6-foot heavy Band Wheel, Governor and independent Pump. Price, \$305. In good order used about two years.

One Horisontal Slide-Valve, Slide-Crank ENGINE, with 9-foot heavy Band Wheel, Governor and independent Boller Feed Fump.; a bargain. \$300.

One Portable ENGINE and \$501.EE, complete, to-Horse 6 x 12); modern design, just been thoroughly repaired. Price, \$355. Ready for use.

One 3-horse Baxter ENGINE and BOILEB; used five years: newly repaired. Price, \$400.

One Upright ENGINE and BOILEB; with Governor, Pump and Heater. Fily-Wheel and Pulley.

One new Upright 8-Horse ENGINE (6 x 9), with Governor, Pump and Heater. Fly-Wheel and Pulley, Price, \$100.

One BOLT and PIPE CUTTER; cuts two-inch pipe and under; with second-hand Pipe Dies and new standard Solid Dies to one inch. Price, \$75.

One Tubular so Horse BOLLER, so inches diameter, 12 feet long, with all the fix ures, Fire Front, Grate Bars, Gauge Cock. Rafety Valve, &c., part of them new; warranted sound and in good order. Price \$350. 50. One Stationary to-Horse BOILER, Cuyahoga Steam irnace Co.'s make; in good order. Price, \$500, with

One Stationary works in good order.

Furnace Co.'s make; in good order.

Furnace Co.'s make; in good order.

Furnace Co.'s make; in good order.

Good order.

Frice, 315, each.

One Earle STEAM PUMP, 1½-inch suction, 6-inch stroke.

Frice, 510,

One STEAM PUMP, 1½-inch suction, 6-inch stroke.

One STEAM PUMP, 1½-inch suction, 6-inch stroke.

One Torrent STEAM PUMP, new, No. B, ½-inch suction.

Price, 325.

Fried, 325.

Fried, 325. Six BOILER FEED PUMPS, new, with tight and loose Pulleys. \$38 each.

YORK & SMITH. CLEVELAND, OHIO.

ELLENDALE FORGE FOR SALE.

This valuable property, situated near Harrisburg, Pa., on the Schuylkill and Susquehanna branch of the Reading Railroad, comprising about 1600 acres of woodland, nearly all fit to cut, is offered for sale on easy terms and long payments. It has run-out, the Wilbraham blower and all necessary improvements to do a large and profitable business. A large stock of charcoal is on hand, and everything about the property is in successful operation. Apply to J. W. KELLENGER, Lebanon, Pa.

FOR SALE.

Portable Hoisting Engine, J. S. Mundy; & h. p. Horizontal Engine, 15½ in. x 36 in.; new Vertical Boiler, 48 in. x 10 ft., 124 tubes; 6 x 8 Double Engine, link motion; 18-in. Lathe; 3-Drill Press; Noa. 1, 3 and 4 Root Blowers; 12 x 12 Vertical Engine, very strong build; Fan Blowers, Heaters, Injectors, Pumps, all sizes.

A. G. BROOKS & WINEBRENER, 26 in N. 3d st., Philadelphia.

For Sale.

First-class HORIZONTAL ENGINE, Size of wlinder, 6 x 15. Twelve-horse-power UPRIGHT BOILER, with

Heater and Pump. BRECHER & PECK, Lock Box 122, New Haven, Conn.

For Sale.

Hardware Stock and Business. Located in one of the best towns of Northeastern Pennsylvania. Stock clean and well assorted, nuited to the requirements of the trade where located. Business of 30 years' standing. For terms and full particulars apply to JAMES S. KUHN, Towanda, Pa.

For Sale.

Ten Doubie Acting Power Punching Presses, Ar order. Eight Single Acting Power Punching Presses, Ar order. Most of the double acting presses are the No. 3 Waterbury Press; the single acting, No. 2. One large Bliss & Williams Punching Press. One hundred and twenty-seven Foot Presses in Ar order, mont of them square slides, Address, THE GEORGE PLACE MACHINERY AGENCY, 121 Chambers and 103 Reade sts.. N. Y.

For Sale.

Stock of hardware, stoves and in store furniture, in one of the best towns in Kansas.

Box 366, Salina, Kansas.

FOR SALE LOW.—ENGINE.

A Vertical High-Pressure Steam Engine, com plete. Cylinder, 24 in. by 48 in. Built by A. J. Sweeney & Son. Can be seen in daily use at our nail factory. LA BELLE IRON WORKS, Wheeling, West Va.

Dixon's Lubricants.

Manufactured by the DIXON CRUCIBLE COMPANY, JERSEY CITY Dixon's Belt Grease.
Dixon's Machine Grease.
Dixon's Perfect Lubricator.
Write for circular.
BREWSTER & PHELPS,
Dealers in Railway and Machinists' Supplies.
246 Clark St., Chicago.

J. SEIDEL, COMMISSION MERCHANT,

Havana, Cuba. Box 669.

Will be happy to accept the representation of first-class houses manufacturing hardware.

References on file at the office of the American

Exporter, 86 Duane Street, New York. FOR SALE CHEAP.—Foundry, Machine, Black-smith, Boiler and Wood Shops, with engine and boiler. Line shafting and pulleys, Mackenzie cupola and blower, forges, &c. Address, E. M. BIRDSALL, Penn Yan, N. Yp

WANTED,—Engagement with an iron manufacturing firm, either as salesman, agent, superintendent of works, or general business manager, References given when required.

Address, E. McMILLIN, Pomeroy, Ohio.

Trade Report.

Office of The Iron Age, Wednesday Evening, August 31, 1881. Early in the week the markets were unsettled by disquieting reports respecting the condition of the President, of which the bears were not slow to take advantage; and the simultaneous advance in the rates of discount by the Banks of England and France to 4 %, followed by an advance to 5 % by the Imperial Bank of Germany, had a depressing effect. Thus far the action of the banks has not had its intended effect in arresting the movement of gold to this country. On Friday, in the stock market, the bull leaders apparently obtained control, and there was a buoyant tendency, prices generally being 1/4 @ 2 % above those of the previous day. On Saturday the advices from Washington in regard to the low condition of the President had little perceptible effect. Prices were generally higher and money was easy. Government bonds were firm for the 4s and a fraction lower for the 5s, on reports that the Secretary of the Treasury will shortly call in a considerable amount of the extended bonds for redemption. On Monday there was a further advance in the issues which it is expected the Secretary will call in September, taking the highest numbers first, as becomes necessary under the law, vis.,

speculation has resulted in lower prices. The market for fereign exchange is dull. The posted rates for prime bankers' sterling remain 4.801/2 @ 4.84; the actual rates are 4.79 @ 4.79% and 4.82% @ 4.83%, with cable transfers 4.831/2 @ 4.831/4 and prime commercial bills 4.771/2 @ 4.771/4.

the 314 % extensions of 5 % and 6 % bonds,

the 4s and 41/2s. To-day it is observed

that the Stock Exchange markets are much

less active than yesterday, and the share

Money through the week has ranged from 3 to 6 % on call, but the fair closing quota tion is 5 to 6. The rate at bank is 6 %. Prime mercantile paper is 5 @ 6 %.

British consols are down to 93 1/4 @ 1/4 for money from 99 3-16ths, and to 99 @ 1/4 for the account from 99 3.16th, due to apprehension of impending bullion withdrawal and reported sales by bankers. Another immediate advance of sales by the Bank of England is anticipated.

As above noted, the stock market for the week closes at an advance, compared with current quotations one week ago. The principal changes are as follows: Advanced-Louisville and Nashville, 3; Western Union, 2; St. Paul, 21/2; New Jersey Central, 31/4; Delaware, Lackawanna and Western, 3; Central Pacific, 21/4; Ohio Central, 21/4; Lake Erie and Western, 21/4; Peoria, Decatur and Evansville, 256; Cleveland, Columbus, Cincinnati and Indianapolis, 4; Rock Island, 31/4; Union Pacific, 31/8; Texas Pacific, 31/2; Missouri, Kansas and Texas, 2; Denver and Rio Grande, 33%.

It is expected that the public debt state ment for August will show a reduction of \$14,000,000.

The exports of domestic products from the port of New York are again very low, due to reprehensible speculations in the West, for which money is being absorbed in large amounts. The total exports of domertic products from the port since January 1 year are \$260,691,725, against \$266, 924,332 last year.

924,332 last year.
The importations of specie and bullion at this port during the week ending Aug. 26 were \$291,531, consisting of \$214,621 in gold and \$76,910 in silver, as against a total of \$5,462,510 for the week ending Aug. 28 last year. The importations since the 1st of January and since the 1st of August compare as follows with the movement during the cor-

Gold	Since 1881.	January 1 1880. \$10,779,965 3,643,013
Total		\$14,422,978
Gold	x88x.	August : 1880. \$8,805,598 448,507
Total	\$1,589,507	\$9,254,105

The bank statement shows the effect of

comparative stringency in a contraction of \$6,173,000 in the loans and discounts, as the reserves are again deficient, while a year ago they were \$6,643,000 above the legal minimum. But the coming week may show an important improvement. The proceeds of the redemption of the coupon and registered 5s may be realized to the extent of several millions, and a good portion of the \$9,000,000 of gold in transit from Europe will have arrived.

The following is an analysis of the bank totals of this week compared with that of

	Aug. 20.	Aug. 27.	Comparison.	I
Loans	\$349.542.800	\$343,369,500	Dec \$6,173,200	1
Specie	67,138,400	62, 151, 400		I
Legal t'd'rs	25.842,800	16,310,000	Inc. 368, 100	1
Tot. reserve	82,981,200		Dec. 4,618,900	Į
Deposits Reserve re-	334,795,600	323,721,300	Dec 11,074,300	1
quired	83,698,900	80,930,325	Dec. 2,768,575	1
Surplus	717,700	2,508,025		J
Circulation.	19,566,000	19,590,900	Inc 34,900	ı
Governn		at the	close were	١
strong at t	he following	g quotatio	ns:	1
IT S .1/'e .6	as manistaned		Bid. Asked	

strong at the following quotations:	
Bid.	Asked
U. S. 41/6's 1891 registered	1131/8
U. S. 45 8 1891 coupon 114	114%
U. S. 4'8 1907 registered	115%
U. S. 4'8 1907 coupon 115%	110
U. S. Currency 68 1805	-
U. S. Currency 6s 1806	-
U. S. Currency 6s 1897	-
U. S. Currency 6st 1808	max
U.S. Currency 68 1899 134	-
"Sixes" continued	tor1/4
" Fives " continued	IOI 3/8

MINING STOCKS. The following are the closing quotations

for mining stocks:

l		Bid.	Aske
Ì	Amie	. 35	36
I	Alice	. 6.25	6.02
	Alta Mont	. I.go	2.00
	Bechtel	. 1.30	1.40
	Bell Isie	. 28	
	Buckeye	. 8	9
	Bulwer		.85
ı	Bull Dom		
ŀ			1.75
ľ	Boulder		
ı	Boston C.	. 10	80
ŀ	Big Pittsburgh		
	Bradshaw		T. TO
	Calaveras	. 12	13
	California	. T.00	1.05
	Climax	. 44	
	Consolidated Imperial		14
	Consolidated Pacific	. 25	55
	Consolidated Virginia	1.90	2.10
	Chrysolite	6,50	6.02
	Cent. Artz	2.00	2.10
	Cherokee	I.IO	1.20
	Dahlonega		6
	Findley	31	33
	G. Placer		33
	Granvfile	5	5
	Great Eastern		20
	Green Mountain	19	
	Hukill		5.25
	Horn Miver	65	75
	Hibernia	13.50	15.00
į	Iron Silver	50	51
			2.25
	Lagrosse		28
	Leadville		1.50
	Little Pitts	2.00	g.80
į	L. Chief	1.35	1.40
	Mar. Pref		4.50
	Moose		
	Navajo		43
	North Stan		19
	Orl. and Mil	90	****
	Rappah'k	80	91
	Robinson		82.375
	R. Sun		2.35
J	Red Eleph	18	¥Q.
į	S. Nevada		16.50
٤	Standard	31.00	
í	Silver Chiff	4.00	4.20
	Sutro		1.55
		3.50	3.00
	Stormont		3.55
	S. Bulwer	25	3.35
	South Hite, new	24	27
í	3t. L. No. 1	80	
	t. Line No. 4	1.00	1.10
	St. L. 1 and 4	80	1.10
	3t. L. 2 and 3		
	Noga	4.15	4.25
		33	38
9	Jnadélla	8	****

Rid Asked

GENERAL HARDWARE.

Some apprehension is felt that the husiness of the country will suffer considerable curtailment owing to the continued drouth, which in some sections is very serious, and has already caused much damage and loss to growing crops. The demand for General Hardware during the week is spoken of as satisfactory, and the supply of Mechanics' Tools continues inadequate to the requirements of the trade.

Foreign Hardware, although in fair request, is not as active as of late. Values are steady and unchanged.

H. Knickerbacker, manufacturer of Blood's Scythes, Edge Tools, &c., issued a card under date of the 27th instant, announcing that in consequence of increased cost of material and labor he was obliged to advance prices of Axes and Tools, and that all previous quotations were withdrawn. Graham & Haines are agents for this line of goods.

The demand for Nails has been active during the week, and prices are firm. We amount of Iron going into consumption is contract for future delivery, except on terms ruling at time of shipment. Assortments of the market continues strong, and some are fair, although some holders are short of prime brands of Lehigh are in short supply 10d. We quote 10d to 60d, \$3.05 @ \$3.15, We quote Foundry No. 1, \$24.50 @ \$25 net, according to quantity.

Harvey W. Peace, proprietor of the Vulcan Saw Works, Brooklyn, E. D., N. Y., has just completed additional factory buildings, increasing his productive capacity fourfold. The new buildings comprise a main building, 50 x 100 feet, four stories, with a two story extension 85 x 25 feet. The engine and boiler house is 65 x 20 feet, battery of boilers, with the latest improvements for insuring safety. In addition to the buildings already mentioned, he has \$22.50 @ \$23, and Gartsherrie, \$23. erected a band saw shop 50 x 60 feet, three stories, supplied with a 20-horse power engine and all the latest improvements in

The Phœnix Castor Company, Indianapolis, Ind., have issued an illustrated catalogue in which they show their large assortment of Martin's Patent Casters. These goods, although but a few years before the Rails, \$48 @ \$49. trade, have become a staple article. They are made in various styles and sizes suitable for light and heavy furniture, pianos, store and warehouse trucks, &c. We invite attention to their advertisement on page 18, in which a variety of these goods are illustrated. The catalogue will be mailed to the trade on application.

We noticed in our last issue an advance in the price of Cast Butts. The following are the revised prices of the Union Mfg. Co.'s, which took effect on the 24th inst.:

Office of Union Mrs. Company, New Britain, Comn, Aug. 24, 1881. Warehouse No. 96 Chambers st., New York. DEAR SIRS: We beg to inform you that we have this day made the following changes

	in discounts of Butts :
	Dis. per cent. Cast Narrow Fast Joint Butts, Drilled and
	Wire Jointed, No. 8040&10 Cast Broad Fast Joint Butts, Drilled and Wire
	Jointed No Se
ı	Jointed, No. 82
	Wire Jointed, No. 8350&10
	Cast Broad Loose Joint Butts, Drilled and
	Wire Jointed, No. 84
	Jointed, Nos. 78 and 8555&10
1	Cast Mayer's Hinges, Drilled and Wire
	Jointed, No. 85
	Japanned Loose Joint Butts, without Acorns,
	Nos. 54 and 57
	Japanned Loose Joint Butts, with Japanned
	Japanned Loose Joint Butts, with Silvered
	Time Nos 16 to and 80
	Tips, Nos. 56, 59 and 89
	No. 6040&10
	Japanned Fast Joint Butts, with Japanned
1	Tips. No. 6135&10
1	Japanned Fast Joint Butts, with Silvered
1	Tips, No. 62
	Japanned Fast Joint Butts, Narrow, No. 8140&10
	Figured Loose Pin Butts, with Tips, Nos. 63
	and go500 to
1	Figured Loose Pin Butts, with Japanned
ı	Tips, Nos. 64 and 91
1	rugured Loose rm bases, with onvered lips,

-		
	No. 66 Figured Loose Pin Butts, without Acorns, 50&10 Japanned, No. 67. Japanned Parliament Butts, without Acorns, 50&10 Japanned Parliament Butts, with Japanned Acorns, No. 75. Japanned Parliament Butts, with Japanned Acorns, No. 75. Japanned Parliament Butts, with Japanned Acorns, No. 77. Terms, cash 30 days. Prices subject to change without notice. The Kimball Shovel Co., Baltimore, Md., quote Kieser's Patent Meat Cutters as follows: No. 55, per dozen. \$40.00 Gem, per dozen. \$40.00 Gem, per dozen. \$5.00 Discount, 40 per cent. Butchers' Cutters. No. 1, each. \$75.00 No. A, each \$25.00 Discount, 10 per cent. Illustrations of these goods will be found in their advertisement on another page. BRITISH IRON MARKET. [Special Report by Cable to The Iron Age.]	sharmars have shown an imp for by the hea owing to the quired, compa The bi-month! the imports of month to have tons for the sthe deliveries have been 216 imports of oth first half of and the deliveripool and was 30,355 ton 29th ult., or a Board of Tradmonths of this been 49,614 to 1880, and 57.7 ports for the stons, against 37,775 tons is
	London, August 31, 1881.	quoted as under

prices are weak. Quotations are unchanged, with the exception of Eglinton, which has been reduced 6d. The following are to-day's

quotations : Coltness " 55/ Glengarnock " Ardrossan. 50/ Eginton " " Lighterage from Ardrossan to Glasgow is 2/@

equal portions Nos. 1, 2 and 3, is 58/.

Manufactured Iron.-The market is quiet and prices steady, with a fair business doing. Best Staffordshire Bars are £7 @ doing.

Steel Rails .- The demand has been steady during the week, and a fair business has been done. Prices are firm. We quote Ordinary Sections £6. 5/@ £6. 15/, an dvance of 5/.

Iron Rails.—Business is light, with prices Welsh are quoted £5. 5/@ £5. 15/. Old Rails .- The offerings are light and ales fair. Prices are firm. We quote Old Tees £4, 2/6, c. i. f., U. S. ports.

Scrap. - Sales have been light, with offerings moderate. Prices are firm. We quote Wrought £3. 15/, c. i. f., U. S. ports.

Freights,-Steam freights from Glasgow

American Pig.-The condition of the Iron market is much the same as at the time of our last writing. The sales announced during the week are not large, but the deliveries have been very heavy, and the notice unwillingness on the part of sellers to greater than it has ever been in our recol-Foundry No. 2 X, \$22 @ \$22.50, and Gray Forge, \$21.

Scotch Pig.-The demand for Scotch Iron has been sufficient to absorb all of the late arrivals, and we do not hear of any Iron going into store. Sales are reported of 200 tons Glengarnock, at \$22.50; 100 tons Coltness and 100 tons Eglinton on private terms, besides which a fair business in retail furnished with a 125-horse engine and a lots has transpired. We quote the market firm as follows: Eglinton, \$21; Carnbroe, \$22.50; Coltness, \$23.50@ \$24; Glengarnock,

Rails.—The demand for both Steel and Iron Rails continues active, and sales of 7000 tons Steel for early delivery at \$60 @ machinery for turning out this class of \$63 are reported. Iron Rails are inquired work. The works are now in full operation. for, but it is not easy to place orders except for postponed deliveries, and it is believed that considerable pending business will be placed in foreign markets. We quote Steel at mill (1882 delivery), \$55 @ \$56, and Iron

Old Rails .- The condition of the market lots are not so abundant as of late. Sales are reported of 1000 tons Old Bridge Rails

METALS

Copper.—Owing to the fact that the consumptive demand is developing unexpected proportions and that little stock is held by proportions and that little stock is held by outside parties, the Copper market has assumed an advancing tendency. Occasionally dealers sell lots at prices a little lower than those demanded by the mining companies, but the amounts thus disposed of appear to be limited. During the week from 300,000 to 400,000 pounds of Lake Copper were sold at 16%, for which figure it would, chandise for the week, prove difficult to obtain the metal, as follows the market being firm at 17¢. According to cable advices from England, no change has taken place during the week. By mail. under date of Aug. 20, we hear the following from London: "Steadiness is still the characteristic feature of this market, and what makes it appear perhaps more inani-mate than it really is, is the absence of any noteworthy speculative inquiry. For legiti-mate account there is a very fair business Figured Loose Fin Butts, with Tips, Nos. 63 and 92.

Figured Loose Fin Butts, with Japanned Tips, Nos. 64 and 91.

Nos. 65 and 92.

Figured Loose Fin Butts, with Silvered Tips, Nos. 65 and 92.

The survey of the first half of the current month; but for some reason or other speculators are very reluctant to turn their at
Machinery.

Metal goods.

s market, notwithstanding that e of late from time to time provement. It may be accounted avy stocks, but it is more likely e large amount of capital re-ared with that for other metals. ly returns of Chili produce show during the first half of this e been 848 tons, against 2370 same time of last year, while for the corresponding periods 65 tons, against 1059 tons. The her kinds of Copper during the August have been 1282 tons. reries 798 tons. The stock of ce in first and second hands in Swansea on the 13th instant ns, against 31,672 tons on the decrease of 1317 tons. The de returns for the first seven year show the imports to have tons, against 58,302 tons in 710 tons in 1879, while the exsame periods have been 34,793 36,092 tons last year, and n 1879." Manufactures are in 1879." Manufactures are ler: Pit and Hot rolled Flat pound; Cold-rolled Flat Scotch Pig.—The demand is small and Bottoms, 27¢ per pound; Cold-rolled Flat Bottoms and Pit Bottoms, with flange cut, 28¢; Braziers, 26¢ @ 32¢, as to size and weight; Circles, 29¢ @ 32¢; Sheeth, 26¢ @ 29¢; Sheathing, 24¢, and Bolt Copper, 26¢.

Tin .- Our market shows no change since last week. The consumptive demand remains good, and is likely to increase further for the fall trade. London cables £89. 10/; Lighterage from Ardrossan to Glasgow is 2/@ 2/6 per ton.

Bessemer Plg.—The tendency to higher figures continues, with brisk demand and large sales. The quotation for lots to-day, so that, estimating the consumption at 900 tons, our stocks must have been drawn upon to a considerable extent. We quote: Straits, 21¢ @ 21¼¢; Australian, 21¼¢; and Billiton, 21¢. Tin Plates.—There has been little change in the condition of the market. The consumptive demand here is reported to be good and prices are firm. Abroad the strong feeling appears to continue, and the following are given as recent tinue, and the following are given as recent cable quotations: Charcoal Bright, 20/; Charcoal Ternes, 17/@ 19/; and Coke Tins, 16/. We quote at the close at New York, large lines, ordinary brands, per box: Charcoal Bright, \$5.87½@ \$6.25; ditto Ternes, \$5.35@ \$5.45; Coke Tin, \$5.12½@ \$5.15; and ditto Ternes, \$5@ \$5.12½.

Lead.—Under the impetus of a very strong consumptive demand and limited spot supplies for this time of the year, Lead is developing much strength. During the Downing, Sheldon & C Mach'y, cs., 12 Drexel, Morgan & Co. week about 500 tons of Common were sold here, at prices ranging from 4%\$¢ to 4.90\$. It is now very firm, with 4.95\$ @ 5\$ asked.
At St. Louis 5\$ has been paid for lots of
Common Lead, and at Chicago there have
been sales at 4.90\$. Refined Lead is scarce,
and after the sale of a few hundred tons of Soft Missouri at 5%¢, that price has been offered and declined. At St. Louis corroding brands are reported to be scarce and readily saleable at 5¢. Abroad the demand is good and prices are firm. Should the upward movement here be maintained, impor Cases, 6
King, H,
Cask, r
Lyles & Gibson
Mach'y, pkgs., 3
Marks & Co. lection at this period of the year. The tone tations may soon be resumed, as the point where it would prove profitable to where it would prove prolitable to do so is fast being approached. Manufac-tures are quoted as follows: Sheet Lead, 7½¢; Lead Pipe, 7¢; Tin-lined ditto, 15¢; Block Tin ditto, 35¢; Drop Shot, 7¢.

Spelter and Zine.—There is little doing in Common Deposits. ommon Domestic Spelter, which is still ad 5 1-6¢ @ 51/4¢. Though the demand quoted 5 1-6¢ @ 51/4¢. Though the demand is small, the stock is light and some improvement is looked forward to as soon as the fall trade sets in. Nothing has been done in foreign Spelter. Silesian remains nominally Sheet Zinc is quoted 7¢. 5360.

Antimony-Has not changed. Cookson is 141/4 @ 141/2¢.

OLD METALS, PAPER STOCK, &c.

McCoy & Sanders
Case, 1
Moore's Sons, J P
Cases, 2
Noyes, Smith & Co.
Cask, 1
Pelgram & Meyer
Mach'y, cases, 4
Pim, Forward & Co.
Roofing, cs., 53
Shot, cks., 26
Remington & Sons
Midse, pcs., 479
Pfizer Charles & Co.
Mach'y, pkgs., 11
Rosenthal J. & Co.
Casks, 5
Sellers, Wm. B.
Case, 1
Case, 1
Case, 2
Case, 5
Soott, W. P.
Cases, 6
Schoverling, Daly
Gales,
Arms, cs., 24 The purchasing prices offered by dealers are as follows Copper heavy... Copper Bottoms Yellow Metal... Brass, beavy... Brass, light... Stove Plate... Arms, cs., 24 Cases. 10 Struller, Lau & Co. The prices current (prices paid by Taylor T.

dealers) for Rags, &c., are as follows: | are reported of 1000 tons Old Bridge Rails to arrive at \$30 and in lots, about 4000 tons Ts and D. H., at prices that have not transpired. We quote Ts, \$27.50 @ \$28, and D. H., \$30.

| Scrap.—There is a fair demand for Scrap, and sales of 800 tons No. 1 Wrought, ex ship and to arrive, at \$27.50 @ \$28 are announced. We quote the same \$28 are announced. We quote the same \$28, ex ship, and for prime selected, from yard, \$30.

| Accordance | Acc

FOREIGN TRADE MOVEMENTS. The following is a summary of the foreign trade movements for the week ended

August 31: For the week: Total. \$6,512,315 \$8,711,183 \$8,443,527 Prev. reported. 196.694,766 320,454,648 276,170,94

Since Jan. 1... \$203,207,081 \$320,155 831 \$284,614,468

Included in the imports of general mer-chandise for the week were articles valued Quantity Value Chains and anchors

Needles			15	9,157
Nickel			6	2,578
Old metal				6,005
Ore			6	493
Platina			2	11,629
Platedware			3	105
Percussion caps			50	5,327
Saddlery			EQ	2,975
Steel		1	0.673	77,700
Spelter		6	6.138	2,416
Silverware			1.5	1.736
Tin, boxes		4	3.627	200,805
Tin, 4,455 slabs, 46	4.866 lbs.		311	96,997
Wire			57	5,515
Zinc		8	3.220	3,686
The following				
articles, compar	ed with p	previo	us da	tes:
	For the	33 W		Same
	week.	of a		time 1880.
Cutlery, pkgs	98	4.	606	5,851
Hardware, pkgs			704	905
Iron, R. R., bars	5,216	261,		406,795
Lead, pigs		20,	351	41,882
MARKET WILLIAM		111		

For	the w	reek er		-				-	:
Total. Previo	usly re	ported							7,273,954
Total	since J	anuary	τ,	18	81.	***			. \$7,578,954
Same	time in	1880		* 4					. 5,382,406
Same	time in	1879							. 13,120,348
Same	time in	1878							. 10,200,785
Same	time in	1877					w x:		. 22,018,137
Same	time in	1876					***		. 39,077,742
Same	time in	1875							64,130,420
Same	time in	1874							. 40,717,178
Same	time in	1873							. 39,914,762
Same	time in	1872							. 56,542,170
	EXP	ORTS, E	KCI	LUI	BIV	E O	F 8	PECI	E.

For the week ended Aug. 30: 1870. Since Jan. x.... \$211,078,740 \$266,904,323 \$251,951,732

IMPORTS

Bardspare. Lundberg G. Bars, 5559 McIlhanney W. H. M. Alexander F. & Sons, Alexander F. & Sons, Iron ware, crates, 16 Bodermann J. Mach'y, cases, 10 Baldwin Bros. & Co. Gun barrel fittings, Relia niey W. H. M.
Ralia, 1369
Perkins & Choate,
Spiegel, kilos., 259,
500
Spiegel, tons, 200
Spiegel, tons, 200
Spiegel, cs., 500
Rods, pkgs., 97
Pierson & Co.
Sheeta, 347
Van Nest & Brown, Vernon H & Co. Brown, Vernon H & Co Anvils, 85 Boker Hermann & Co. Cutlery, Cas., 3 Cutlery, Cas., 4 Guns, ct., 22 Chains, cks, 2 Casaux H. Nails, cs., 9 Castler W. C. Mach y, pcs. and

Mach'y, &c., pkgs., a wning, Sheldon & Co

Case, 1 Field Alfred & Co.

Arms, cs., 6 Graef Cutlery Co.

Hodgkins & Haigh

Arms, cs. 4 Hartley & Graham,

Packages, 12 Merchanta Disp. Co, Case, 1 Casks, 3 Moss F. W.

Files, cks., 3 Meyer, H. A., Jr. Packages, 846 Bales, 4 Bundles, 10

McCoy & Sanders Case, 1

Cutlery, pkgs., 3 Ward Asline

Arms, r Witte John G. & Bro.

Gun barrels, cs., 17

Cases, 5 Mach'y, cs., 9

Iron.

Durand, J.
Ore, tons, 1000
Drexel, Morgan & Co,
Ore, tons, 301½
Elliott Sons & Co.
Ore, tons, 2430
Field C. de P.

Pield C. de P.
Pig, tons, 100
Hildick A. H.
Chains, 28
Chains, cks., 12
Lee James & Co.

Casks, 2 Casks, 2
Williamson, Jas. & Co.
Pig, tons, 600
Order,
Colled iron, bd is, 66
Pig, tons, 1503
Pig, lot
Old rails, 1533
Old rails, pcs., 565
Bundles, 621 Davies & Co. Cases

Bundles, 633 Sheets, bdis., 250 Iron roofing, cs., Spiegelsen, tons, 3306 Spiegelsen, lot Spiegelsen, lot Bars, 302 Ore, tons, 5008 Wire rods, bdls., 574 Rods, pkgs, 13.5 Ingots, 131 Old iron, pcs., ws Railis, 709 Packages, 19 Oxide of iron, bribs,

Steel.

Cases, 28
Anvils, 50
Cask, 1;
Firth Wm., Sons & Co.
Mach'y, cs., 13
Folsom H. & D.
Arms, cs., 10
Godfrey James G.
Arms, cs., 6 Abbott, Jose & Co. Cases, 32
Baring Bros. & Co.
Blooms, Bessemer, Blooms, Bessemen 1163 Brown Bros. & Co. Wire rods, rings, 2 Wire, pkgs, 20 Brown Wm. Bundles, 134 Cases, 1 Carey & Moen Rods, bdls., 465 Drexel, Morgan & Co Blooms, 226 Blooms, 5269 Lake Shore & M feliga R. R.

Rails, rcos Moss F. W. Bundles, 53 Bars, 16 Oelrichs & Co. Sanders Bros.
Blooms, 339 Blooms, 339
Order,
Forgings, 32
Spring steel, bdls, 8
Blooms, 11,061
Bloom ends, tone

Rails, tons, 1000 Crop ends, tons 350 Rods, 1276 Wire rods, bdls., 2195 Bands, 346 Strips, casks, 15

Baring Bros. & Co. Tin plates, bx s., 2317 Best, Heary Copper head of com-denser

denser Bruce & Cook Tin plates, bxs., 705 Combs, Crosby & Eddy Type, bbls., 8½ Dickerson, Van Dusen & Co.
Tin plates bxs, 753
Drexel, Morgan & Co.
Tin plates, bxs., 16,-

Elwell, J. W. & Co.
Brass, bbl. 1
Yellow metal, bbl. 1
Emerson & Foote
Nickel alloy, cs., 15
Field Alfred & Co Cases, 9 Waefelaer & Dysters Iron hook nails, cks., Winchester Rep. Arms Gun caps, cs., 15 Empty cartridges, cs., 26

Hents, Henry Tin, slabs, 176 Jones W. C. Jones W. C.

Copper ore, bx., t
McGee, James
Tin plates, bxs., 3000
Meyer G. A. & E.

Zinc oxide, bbls., 300
Mestre & Dental, tcs., 2
Yellow metal, tcs., 2
Macy's Sons, Josiah
Zinc oxide, bbls., 100
Meel A.
Tin plates, cs., 9
Moore's Sons J. P.
Empty cartridges,
CS., 12 Anglo-Am. Roofing Co.

Roofing Co. Roofing Co. Roofing Co. 120
Baring Bros & Co. Rods, pkgs., 407
Ore, tons, 1982
Pig, tons, 610
Colls, 1154
Brown Bres. & Co. Gal. wire rods, cks., 26 Phelps, Dodge & Co.
Tin plates, bxs., 7565
Black taggers, bxs.,

Carr H. W.
Sheetiron, bdls., 3
Crocker Bros.
1/19, tots, 140
Dinglestedt & Co.
Wroughtiron, case, 1
Durand, J.
One, tons, 1909 Antimony, cks., 50
Antimony, cks., 50
Tin, ingots, 277
Rogers, Henry
Packages, 2
St. Louis Stamping Co. Order, Black taggers, bzs.,

Tin, bxs., 189 Tin plates., bxs., 24, Tin ingots, 600 Quicksilver, bottles, Antimony, cks., 30

EXPORTS

Of Hardware, Iron, Machinery, Metals, &c., from the Port of New York, for the Week ending Aug. 16, 1881:

Danish West Indies. Sew. ma., cs. 23 Sew. ma., bxs 1 Sew. ma., cs. 23 Sew. ma., bxs 1 Iron, cs. . . . 150 Pumps, pkgs 8 Burners, cs. . . 15 Ag. imp., pkgs 125 Iron safe. Mf. iron, pkgs 123 Mach'y, pkgs . 35 Hdw., pkgs . . 150 Quan. Val. Boiler...... I Mf. iron, pkgs 28 Ptim, gals...4, 30 Sew. ma., cse. 5 Dutch West Indies. Ptlm., gals.. 3.444 Clocks, pkgs.. 3 Hdw., pkgs... 55 Castors, pkgs. 7 Pumps, pkgs. 2 Mf. iron, pkgs 9 Mf. fron, pkgs 9
Sow. ma., Cs. 12
Cutlery, pkgs 3
Prim., gals. 12,000
Clocks, pkgs. 35
Nails, pkgs. 45
Mach'y, pkgs. 4 Cardiff. Mach'y, cs... Leith. Hdw., pkgs... 3 Pumps, pkgs... 1 Cork China. Ptlm .. gals 218,500 17,700 Ptlm., gals.s6e,oco 29,838 Clecks, cs..... s8 1,100 Waterford. Ptlm., gals., 80,000 7,642 Santander. Dublin. Prim., gals. 284, 187 24,938 Ptlm., gals. 138,500 11,628 Gasoline, gals. 960 197 Alicante.

Ptim., gals. 150,041 14,600 British North Amer-toan Colonies. Cutlery, cs... p Clocks, pkgs... 6 Mf. iron, pkgs 8 Pig iron, tons. 130 Iron forges... 6 Lisbon Clocks, bxs... 46
Windmills, cs. 27
Brass gds., cs. 1
Ptlm., gais.730,000
Mf. Iron, pkgs 3 Bristol. Hdw., cs..... 8 Hull. Ptlm., gls. 1,073,717 85,002 Mf. iron, pkg8 1,487 15.430 Clocks, pkgs. 68 1,306 Ag. imp., pgs. 122 1,698 Hdw., pkgs. . 155 3,619 Mach y, pkgs. 5 297 Ptlm., gals.251,650 25,165 Beyrout. Ptim., gals. 150,000 16,318 Piraus. Ptlm., gals. 146,820 15,500 Fiume.

Cuba.

United States of Co lombia.

10m bia.

10

Arms, ca....
Pumps, pgs...
Boiler....
Tanks...
Steel gds, cs...
Bdw. pkgs...
Mach'y, pkgs...

Guns, cs. Tower clock. Copper, pkgs. Nails, bxs.

Venezuela.

Nails, kegs... 31
Hdw., pgs... 103
Sew. ma., cs... 31
Metal, cs... 3
Lead, pgs... 3
Cop., sheets... 20
Shoe nails, bxs. 4

Mach'y, pkgs. 134 I. r. goods, cs 2 Ptim., gals..., 7, 165 Iron, pkgs... 145 Shot, bxs... 2

locks, os...

Cutiery, cs....

Tacks, kegs... Caps, cs..... Spelter, slabs. Locomotives

Central America.

Tacks, cs.... 16 Agl. imp., pgs 8 Constantinople Ptlm. gais. 164,000 18,040 Hauti.

Gibraltar. Ptlm., gals.60y,207 47,852 Ptlm., gals.113,875 25,763 London Ag. imp., pkgs 22 Clocks, bxs... 115 Mach'y, pkgs. 107 Cartridges, cs 20 Sew. ma., cs.. 225 Mf. iron, pkgs 31 Spelter, slabs. 3, 288 Rifles, cs..... Metal gds., cs. Pumps, pkge. 2 Hdw., pkgs... 320 1 Ptim., gis. 1,415,595 12 Rifles, cse... 4

Rotterdam. Mf. iron, pkgs 104 1,551 Pumps, pkgs.
Mach'y, pkgs.
Mach'y, pkgs.
Ag. imp.,pkgs
Scales, pkgs.
Tuling of Hamburg.

Ag. imp. pkgs. r6 Spelter, slabs, 4,906 Mf. iron pkgs 3 Sew. ma., 08. 10 Tacks, cs. . . . 4 Old metal, csks 27 Sew. ma., cs. Hdw., pkgs... Mach'y, pkgs... Clocks, cs... I. r. gds., pkgs. Cutlery, cs... Riflas, cs.

Liverpool. Brake fixt., cs.
I. r. goods, cs.
Pens, cs.
Revolvers, cs.
Fish hooks, cs Pumps. pkgs... Clocks, pkgs... Mach'y, pkgs... Met. gds.pkgs... Hdw.. pkgs... 5,510 8,653 1,693 5,099 5,115 Met. gds. pkgs. Hdw. pkgs... Sew. ma., cs... Mf. iron, pkgs... Ag. imp., pkgs... Pumps, pkgs... Rifies, cs.... Metal. cs... Pistole cs... Nic'l mat'l pgs 11

Glasgow. Gatl. guns.... Clocks, box... Chocks, box... I Guns, case... I Ox. ginc., bbls see Cop. plates, cs y Pumps, pkg... 2 Cartridges, cs 5 Ag. imp., pkgs 1 Hdw., pkgs 1 Japd iron, cs. 26 Mf. iron, pkgs 1 Mach'y, pkgs 36 Bremen.

Sew. ma., cs.. 9 Nails, kgs.... 27 Pılm., gals...6,463 Clocks, bxs. Clocks, bxs...
Sew. ma., cs.
Cop., sheets...
Mach'y, pkgs...
Hdw., pkgs...
Mf. iron, pkgs...
Propellor, cse
Pumps, pkgs...
Carbines, cs...
Lr. goods, bgs. Hdw. pkgs Chains, cs... Hdw., cs... Ag. imp., pkg. Nails, pkgs... Ptg.presses, cs Guns, cs... 1,442 I. safe 1 180 Mf. iron, pkgs 33 1,004 Cutlery, cs.... 1 102 Sew. ma., cs.. 17 228 Carbines, cs.. I. r. goods, pgs Cutlery, cs... Agl. imp., pgs Stockhalm. Mewico.

Ptlm., gals 108,204 9,738 Mf. iron, pgs.1,e84 13,175 Steel, bdis... 52 505 Cutlery, cs... 34 8,001 Pig iron, tops. 40 940 Nails, bxs... 9 115 Copenhagen. Clocks, bxs... Hdw., cs.... Mach'y, pkgs. Mf. iron, pkgs. Nails, bxs. 9
Arms, cs. 17
Sew.ma., cs. 168
Clocks, cs. 33
Brass gds, cs. 8
Hdw., pkgs. 620
Iron, pkgs. 339
Iron, pkgs. 339
Iron, pkgs. 139
Iron, pkgs. 139
Iron, pkgs. 130
Tin, foil, cs. 2
Cartridges, cs. 1
Scabbards, cs. 1
Nails, kegs. 188
Revolvers, cs. 1
Pistols, cs. 5 Antwerp. Mach'y, pkgs. 5 1,751
Mach'y, pkgs. 5 1,751
Hdw. 08.... 30 1,158
Ftlm.,gls. 1,724,003 13,4,886
Stoves.... a8 320
Mf. iron, pkgs. 7 2,000 British Honduras. Mfd.iron,pkge 19 384 Hdw., pgs... 9 161 Ptlm., gals 100 19 Sew.ma., cs... 5 143 Cutlery, cs... 1 31 Nails, k-ggs... 38 16s

Hdw., pgs.... Ptim., gais ... Sew. ma., cs... Cutlery, cs... Nails, k :gs... British West Indies. Mf. iron, pkgs 206 1,904
Ag. imp., pkgs 25
Mach'y, pkgs 10 568
Nails, kegs .. 296 7,181
Sew. ma., cs. 47
Cuttery, cs. .. 2
Windmills, cs. 3 140
Windmills, cs. 3 140
Ptlm galls, 20,244
4701

Mach'y, pkgs. 1 61 Mf. iron, pkgs 183 1,730 Iron safe..... 1 60 Nails, kegs.... 27 104 British East Indies. Ptlm gals. 265,600 04,500

British Australia. 374 1,992 Ptlm, gals..77,050 Nails, kegs... 230 Ag. imp.,pkgs 40 Mach'y, pkgs. 6 Hdw., cs.... 32 Uruguay. 114

New Zealand. Nails, pkgs... 44 1,178
Pumps, pkgs... 3 7,737
Ag. imp.,pkgs 11 763
Nails, pkgs... 5 90
Hdw., cs... 3 284
Clocks, cs... 45 681 Hdw., cs... 3 Clocks, cs... 45 Hdw., pkgs... 277 Mf. iron., pkgs 263 Ag. imp., pkgs 80 Nails, kegs... 10 Pumps, pkgs... 5 Mach'y, case... 1 Havre.

Ptlm., gals. 299,401 2

Kanigsberg.

Elsinore.

Ptlm., gals. 358,776 31,79

Drammen.

Christiana.

Dansig.

Porto Rico.

Canary Islands.

Alexandria.

Ptlm., gals.114,820 13,00

in Africa.

Japan

Africa.

Ptlm., gals. 147,850 12,

Ptim., gals...5000 Mach'y, pkgs. 55 Mf. iron, pkgs. 4 Nails, kegs... 200

Clocks, bxs... 3

Hdw., case... 1 260 Ptlm., gals,413,061 49,052 Clocks, bxs... 22 500 Muskets, case 2 30 Lances, csec... 1 50 Mach'y. cs.... 5 1,797
Ptlm., gals. 136,689 9,86
Clocks, cs.... 10 275
Jap'nd iron, cs 35 300
I. r. goods, cs. 4 312
Ag. imp. pkgs 13,1,550
Pumps, pkgs. 2 175 Dutch East Indies. Ptlm., gls. 1,426,450 170,364 Dutch West Indies. Ptlm., gals.... 595 79 British Possessions Bordeaux. 4n Africa. Hdw., pkgs... 401 Mach y pkgs... 24 Pumpa, pkgs... 7 Sew. ma., 08... 9 Tacks, cs.... 3 Ptim., gals... 52, 750 Ag. imp., pkgs... 31 Mf. iron, pkgs. 54 Ptlm., gals. 194,824 14,124 Naph., gals. 146,072 12,653 Rouen. Naph.,gals. 165,633 14,359 Margoilles.

Mf. iron, pkgs 37 196 Ptlm., gals.307,719 22,747 Dunk4rk. Ptlm.,gals.386,525 29,236 Ptlm., gals.600,000 67,750 Ptlm., gals, 287, 291 20, 104 Argentine Republic. French West Indies Ptlm., gals....9000 1,066 Ag, imp., pkgs 4 30 Mach,y, case. 1 E₅

Mach, y, case. 1 5 Clocks, pkgs., 70 Clocks, pkg

That there is to be no immediate advance That there is to be no immediate advance in Coal prices is a fact beyond the arena of discussion, and whether prices will advance or fall before the end of September is a question where decided differences arise. On the one side, it is intimated in so many words that "with the present tremendous output of Coal, prices must give way," they it could not a conscientiously advise core. I. rails... 100 384
Pumps, pkgs... 3 118
Nails, kegs... 43
Tin, bxs... 4 65
Tubing, cs... 7 311
Hdw., pkgs... 370 6,151
Cutlery, cs... 2 105
Ag. imp.,pkgs s3 879 "could not conscientiously advise con-sumers to buy," as things now look. On the other, it is contended that the trade other, it is will readily take all the coal produced, and prices be maintained, if not advanced. The prices be maintained, if not advanced. The volume of trade at present is admitted to be pretty good, and the season is approaching when the requirements for local consumption—in the near-by trade—will be very large. According to the best information obtainable, prices are no more than fairly maintained, there being some little cutting among the individual traders. In the Pottsville region there is complaint of scarcity of water, which is used in washing the smaller sizes, and there is trouble in some quarters from difficulties in canal navigation. This is particularly true in canal navigation. This is particularly true in canal navigation. This is particularly true at Georgetown, in the Bituminous trade, though at other shipping points there is no embarrassment on this account. As noted above, Anthracite is quoted as herotofore, viz.: Lehigh, \$5 @ \$5.25 for Lump; \$4.25 @ \$4.45 for Grate, Egg and Stove; Chestnut, \$3.90 @ \$4. The free-burning Coals are about \$3.90 for Lump and Grate, and graded in like proportion for other descriptions. graded in like proportion for other descrip-tions. In Bituminous there is apparently a good business doing, though at prices not altogether satisfactory to producers. Cumberland is quoted, at Georgetown, f. o. b., \$3.10 @ \$3.25; at Baltimore, \$3.25 @ \$3.40. Freights continue to advance, owing to the scarcity of vessels. They have not bethe scarcity of vessels. They have not be-fore been so high since 1873. To Boston, \$1.50; Providence, \$1; Norwich, 90¢; New Bedford, \$1.10; New Haven, 65¢. A year ago rates were only about one-half of what they are now, around the Cape.

previous, and 102,863 tons for the week previous, and 102,863 tons for the corres-ponding week of last year. The total pro-duct for the week was 604,376 tons, against 424,387 tons for the same week of last year, an increase of 179,989 tons. The total output for the year is 16,881,069 tons, against 13,253,452 tons for the corresponding period of last year, an increase of 3,627,617 tons.

PHILADELPHIA.

Office of The Iron Age, 220 South Fourth St., PHILADELPHIA, Aug. 30, 1881.

Pig Iron.-The market is steady, and although the demand is not specially large, prices are strong, with an upward tendency. The evidences of scarcity have become further confirmed during the past week, and many of the leading brands are practically out of the market. This is specially the case as regards good mill irons, which are exceedingly scarce and obtainable in small lots only. The immediate future of the market is difficult to define, but from the fact of 5 2.307 2 150 2 150 2 150 2 16,754 13 40 14 220 154 3,864 In the meantime, however, prices are gradually hardening, and looking at the immediate supply as compared with the demand, it is difficult to see how a further advance can be avoided. Inquiries for demand, it is difficult to see how a further advance can be avoided. Inquiries for large lots are coming in from interior points. This appears to be all that can be

Wrought Iron Pipe.—There is an active demand, and prices are firm at 40% discount large lots are coming in from interior for Boiler Tubes, and 65% for Gas and points. This appears to be all that can be

Wrought Iron Pipe.—There is an active demand. There is an active large lots. Sales have been made at these figures.

Manufactured Iron.—Ramors prevail that an attempt is being made in certain quarters to advance the card, but manufactured large lots. Sales have been made at these figures.

Manufactured Iron.—Ramors prevail that an attempt is being made in certain quarters to advance the card, but manufactured large lots. Sales have been made at these figures.

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Manufactured Iron.—Ramors prevail that an attempt is being made in certain quarters to advance the card, but manufactured large lots. Sales have been made at these figures.

stated with any degree of definiteness, but, as we have said, the indications but, as we have said, the indications as regards the early future favor the expectations of higher prices. Taking a more extended view of the position, however, there is very little reason to suppose that Ptlm., gals.143,388 11,830 an advance can be maintained any length of time, and, if consumers adopt that theory, prices may be kept within reasonable limits, Ptlm., gals. . 79,150 6,531 and a reaction, such as usually follows an unhealthy rise, avoided. No. I Foundry may be quoted at \$24.50 @ \$26, with very light offerings. The best-known brands are held firm at the outside figure, and any-Ptlm., gals., \$3,081 6.818 thing below \$25 is rather exceptional. No. 2 sells at \$22 @ \$22.50 without difficulty. Good mill Irons are probably scarcer than anything else; the best brands, in fact, are hardly obtainable at all, except by regular buyers, and in small lots. Probably \$20.50 is now an insite quotation for any fair articles. ticle, up to \$22 for the best, although of the last mentioned the demand is far beyond the supply. Sales for September delivery have een made by several interior furnaces at \$1 advance on prices quoted a month ago for August delivery, and the average along the entire line indicates an advance of about \$1 per ton, although in some cases quotations are nominally unchanged; market firm at the rates above named.

Foreign Iron.—The market is unsettled and feverish. Some descriptions are held at higher prices; others are a shade weaker. Bessemer Iron has sold pretty largely during the week, but closes rather easier, particu-larly for early shipments. Sales to the extent of 15,000 tons have been closed at about \$25 for spring shipments, at which quotation holders are pretty steady. September and October shipments are offered at \$24.50, and in some cases concessions of 50¢ per ton could probably be obtained; in fact, it is rumored that \$23.75 was accepted for a lot a few days ago. Appearances indicate that Bessemer Pig has reached its maximum for the present, the market having become rather in favor of buyers during the past ter days. Middlesboro' Iron is decidedly strong The demand is quite active, but there is very little offering, although there are lots in store held for a higher market. There is no inducement to forward shipments at less than about \$19.50 for No. 3, and as the mar-ket has not reached that point yet, there is a standing off on both sides. A few small lots are obtainable at about \$19 from store, but buyers consider \$18 a fair price, and are not prepared as yet to advance their bids. Scotch Iron is entirely nominal at \$21 @ \$24. Scotch Iron is entirely nominal at \$21 @ \$24, according to brand, but business is purely of a retail character.

Muck Bars-There is a good demand at \$40, but holders of first-class quality are firm at \$41. Sales have been made at both prices, and the market is rather in sellers' favor.

Blooms-There is no change to report The market is bare of stock, and last week's quotations are fully maintained, say, Charcoal Blooms, \$72.50; Run-out Authracite, \$60 @ \$62.50, and about \$52.50 for Scrap

Bar Iron.-There is nothing to add to our remarks of last week, beyond the fact that store prices have been advanced to 2.7¢, but from mill there is no change from 2.5¢. The demand is very large, and many orders are left unfilled from week to week The unusually hot weather of the past few days has been unfavorable for a large output at the mills, and until there is some sottled change, the scarcity of Iron may be expected to continue. The demand is enorexpected to continue. The demand is enormous, and all the indications point to continued activity up to the fullest capacity until the close of the year. Manufacturers are already so far behind that they are averse to entering new orders, but are mak-ing every effort to complete their old con-tracts. This extends through every department, with scarcely an exception of any kind. Bars are called for in every direction but for the time being cannot be supplied in any reasonable proportion to the demand. The blockade would not be alleviated by an The blockade would not be alleviated by an advance in prices, unless by bringing in foreign Iron, and if this becomes a necessity, it will be for the interest of the entire trade to have it at as low prices as possible; otherwise, the experience of 1879 will be repeated. Large additions and improve The production of Anthracite Coal for the week ended August 20 was 599,684 tons, as

whatever, and in the present crowded condition of business comment is unnecessary. Orders for early delivery are difficult to place, but prices remain as before, viz.: 2.7¢ for Angles, 3.3¢ for Beams, 3.4¢ for Channels, and 3.5¢ for Tees.

Plate and Tank Iron.—The same condition of affairs prevails in this department, and there are nearly twice as many orders offered as can be accepted Prices are nominally as follows: 3.25¢ for Tank Iron, 3.75¢ for Refined, 4¢ for Shell, 5¢ @ 5½¢ for Flange, and 6¢ @ 6½¢ for Fire-box.

Sheet Iron.-This branch is probably more crowded than any other, and usual run of small orders, manufacturers regard themselves as full to the end of the year. There has been no interval of slack-ness since the first of January, and the demand has increased, almost without a break, week after week. It is difficult to average, say

Common Sheet, No. 26 to 28.

Common Sheet, No. 22 to 25.

Common Sheet, No. 16 to 21.

Best Refined 1/4 @ 1/4 advance on the above Best Rloom Sheets. No. 26 to 28.

Best Bloom Sheets, No. 26 to 25.

Best Bloom Sheets, No. 26 to 25.

Best Bloom Sheets, No. 26 to 25. Rest Bloom Galvanized, discount second quality, discount

increased strength during the week, and prices may be considered firm at \$58 @ \$60, prices may be considered firm at \$55 @ \$00, according to date for delivery. For immediate delivery \$62.50 and upward can be obtained, but it is exceedingly difficult to place an order unless for delivery after place an order unless for delivery after November. Some large orders are under orders booked sufficient to absorb their proper negotiation, and it is likely that one for 50,000 tons for an Eastern company will be closed in a day or two. Two or three other companies are likely to be heavy buyers before the close of the season, and there is the close of the season, and there is Hoop Iron, 2,90¢ @ 3.10¢, as to size; before the close of the season, and there is Hoop Iron, 2,90¢ @ 3.10¢, as to size; before the close of the season, and there is Hoop Iron, 2,90¢ @ 3.10¢, as to size; before the close of the season, and there is Hoop Iron, 2,90¢ @ 3.10¢, as to size; before the close of the season, and there is Hoop Iron, 2,90¢ @ 3.10¢, as to size; before the close of the season, and there is Hoop Iron, 2,90¢ @ 3.10¢, as to size; before the close of the year, and prices are steady. Merchant Bars, 2.50¢ rates; Sheet, 4.20¢ @ 4.25¢; Tank, 3.40 ¢ @ 3.50¢; as to size; before the close of the year, and prices are steady. Merchant Bars, 2.50¢ rates; Sheet, 4.20¢ @ 4.25¢; Tank, 3.40 ¢ @ 3.50¢; as to size; before the close of the year, and prices are steady. Merchant Bars, 2.50¢ rates; Sheet, 4.20¢ @ 4.25¢; Tank, 3.40 ¢ @ 3.50¢; as to size; before the close of the year, and prices are steady. higher. It is not likely that over \$56 will be paid for the large lots above mentioned, but orders of this kind are desirable, as deliveries to a certain extent are at seller's option. The demand seems to be larger than was anticipated, and as it is impossible to meet all demands promptly prices are stiffening, and those willing to pay a slight premium are likely to receive the most prompt attention. Foreign Rails are firmer also, and sales for American account have been made at £6. 5/, say \$61 delivered at Atlantic ports. There are other orders waiting acceptance at same price, but as a rule deliveries cannot be made as early as buyers require. There is considerable demand for light Rails for shipment to Gulf ports, but we have not heard of sales during the past few days.

Steel Blooms.—There has been a con iderable business done during the past ten days at prices varying from £6. 4/ to £6. 7/6. c.i.f., equal to \$43.50 @ \$44.50, duty paid There are other inquiries in the market, but as prices are a shade higher and early shipments not obtainable, buyers are inclined to withdraw their offers and wait for further developments.

Railway Fastenings .- There is a large demand, and manufacturers have considera ble difficulty in making time on deliveries Prices are firm and steady as last quoted: Spikes, 2.75¢; Fish Plates, 2.3¢ @ 2.4¢, and Bolts and Nuts, 3.25¢ @ 3.75¢.

Iron Rails .- The market is very quiet, and only small lots are called for at about \$47 @ \$47.50 at mill. A more active demand is expected at an early date, but in the meantime the mills are fully employed on old contracts. English Rails can be had at about \$45 for 56's, but the demand is not Light sections are quoted from active. \$48.50 @ \$52.50, according to pattern.

Old Rails.—There is very little demand and prices are unchanged. The demand for winter and spring shipments is a little stronger, but spot lots are offered at about last week's prices, say, \$27.50 @ \$28 for Tees, and \$29.50 @ \$30 for Doubles. The Tees, and \$29.50 (@ \$30 for Doubles. The only sales reported were at about £4, f. o. b., say \$37.50 duty paid, holders now ask an advance of about 50¢ per ton.

Crop Ends-Are nominal at about \$27 nt sales reported.

Old Car Wheels.—A sale of 750 tons was made a few days ago, deliverable at an interior point, at a price equal to \$30, Phila-delphia delivery. The market is steady at \$29 @ \$30, according to make.

Scrap Iron.-The market is very firm and the demand active; Choice No. 1 sells at \$30 @ \$32; Short at \$28 @ \$29, and Cast

Coke.-There is a good demand and prices are steady at \$1.60 @ \$1.65, free on cars at ovens. Small Foundry orders are filled at

bout \$1.70.
Nalls.—The demand is active and stocks are unusally light. Prices are unchanged, say \$3.15, less the usual discount to the

PITTSBURGH.

Office of The Iron Age, 77 Fourth Avenue, } PITTEBURGH, PA., Aug. 30, 1882.

Notwithstanding the critical condition of the President, and continued dry weather, general business keeps up well, and for the great staple here, Finished Iron, the demand still keeps in excess of the supply. The con-tinued drouth is attracting considerable at-tention, and there is no diguising the fact that the fall crops will be considerably be-low an average. In this section there has been no rain for more than two weeks; pasture is almost ruined, and it will not be long before farmers will have to commence

The production of Anthracite Coal for the week ended August 20 was 599,684 tons, as against 430,586 tons for the corresponding week of last year. The total production for January I was 16,706,579 tons, as against 13,195,348 tons for the corresponding period last year, making an increase this year of last year, making an increase this year of 3,511,231 tons, or over 106,000 tons per week.

The coal product of the Schuylkill region

The coal product of the Schuylkill region

The coal product of the Schuylkill region

The production of Anthracite Coal for the weeks (or, at most, a few weeks (or, at most, a few that in a few weeks, but this was to be expected in view of the large purchases made by most of the milk during July and the early part of August, and as most of the furnaces are sold from one to two months ahead, there is but little offering. There is no weakness being the trade are in favor of holding prices as steady as possible, and it is believed that the first indication of a decline the lack of buyers is equally remark.

The coal product of the Schuylkill region of the series of the furnaces are sold from one to two months ahead, there is but little offering. There is no weakness being developed. On the contrary, some furnaces are holding out of the market with a ready sale at strong prices, notwith-standing consumers generally have been anwith a ready sale at strong prices, notwithstanding consumers generally have been anticipating future wants and the most of
them have fair stocks. Prices remain about
as last quoted, although sellers demand the
outside figures, and some of them, as already
intimated, are refusing to accept ruling
prices. We continue to quote Foundry Irons
at \$22 @ \$22.50, 4 mos., for those made from
native ores, and \$23 @ \$24, 4 mos., for
those made from lake ores, the latter quotation for a strong Neutral, inclined to redStock imported is somewhat stronger at
\$27 @ \$29. We quote: American Scotch,
\$27 @ \$29. We quote: American Scotch,
\$25 @ \$28; Silvery Soft, \$23 @ \$25; Lake
Superior Charcoal, Nos. I and 2, \$29. 50 @
\$31.50; No. 3, \$32; Nos. 4, 5 and 6, \$34 @
\$35.

**Manufactured Iron.—The market is
firm and the demand excellent, with no
change in quotations. We quote: Bar,
2.70\$ in store and 2.60\$ at mill; Angle,
3.50\$; T, 3.70\$; Hoop at 3.30\$ rates;

Scotch imported is somewhat stronger at
\$27 @ \$29. Not quote: American Scotch,
\$25 @ \$28; Silvery Soft, \$23 @ \$25; Lake
Superior Charcoal, Nos. I and 2, \$29. 50 @
\$31.50; No. 3, \$32; Nos. 4, 5 and 6, \$34 @
\$35.

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3.50\$; T, 3.70\$; Hoop at 3.30\$ rates;

**Provided in the provided tion for a strong Neutral, inclined to red-short. We heard of a sale of 1000 tons of the latter at \$23.75, cash. All ore Red-short quotable at \$23.75; cash. An ore decision quotable at \$25.50 @ \$26.50. Foundry Irons continue quiet. The demand is chiefly of a hand-to-mouth character, while prices remain unchanged. No. 2, \$23 @ \$23.50; No. I ditto, \$24. @ \$25. Sales of Cold-blast in less than carloin less than those quoted. Charcoal at \$35.50 @ \$36, cash.

Bessemer Iron .- While we continue to hear of more or less inquiry, there have been give exact quotations on such a market, but as a rule, the following are about a fair

Steel Rails.—The market has developed turers generally are opposed to it and the movement is almost certain to be a failure ; while manufacturers would like to have better prices, they are apprehensive that an advance might start up the importation of foreign iron again. Business keeps up well, Mills are all very busy, some of them have

Nails .- The demand continues light for the season, but manufacturers do not despair of a good fall trade yet. Prices remain unchanged—\$3, with the usual abatement and discount, bringing the net cash price for car-load lots and upward down to \$2.85.

Wrought Iron Pipe.-There is no let up in the demand, which has been very large for some time past, and prices are firm, but nchanged. Discounts on Gas and Steam Pipe, 62½ @ 65 %; on Boiler Tubes, 40 %; Oil-well Casing unchanged at 75¢ per foot, net, and Oil-well Tubing, 22¢.

Rails, &c.—We can report a sale of Steel Rails effected here for delivery next year, equal to \$61, cash, at mill. For delivery within next 60 days a big price could be obtained, but few, if any, of the mills can take anything more for this year. Railway Spikes, remain unchanged at 3¢, 30 days; Splice Bars, 2.40¢ @ 2.50¢; Track Bolts, 3.40¢ @ 3.60¢.

Steel .- There is an increasing demand for all kinds of Merchant Steel, and prices are steady as quoted. For Steel Boiler Plate the demand is growing more urgent every year. Best brands of Refined Cast Steel year. Best brands of Refined Cast Steel, II¢; do. Crucible Machinery, 7¢; Bessemer and Open-hearth Machinery, 5¢ @ 5½¢; do. Plow, 4¼¢ @ 4½¢; do. Spring, 4¢ @ 4½¢; Boiler Plate, 6½¢ @ 6¾¢.

Scrap.-There is an increasing demand for Wrought Scrap, and prices are firm, quoted at \$27 @ \$28 per net ton for Ordinary, and \$30 @ \$31 for Selected Railway. Old Car Wheels are dull, but nominway. Out of the state of the st \$38 per net ton; do. Springs, \$39 @ \$40; Crop Ends, \$30 per gross ton; Cast Borings, \$16 @ \$17; Wrought Turnings, \$20 @ \$21 \$16 @ \$17;

Window Glass.—According ment, all the manufacturers in the Western Association will start up their works on the Ist of September, after a rest of three months. The demand at present is not to say active, yet it is increasing. As might be expected, with production cut off three months, stocks are very much reduced, and it will require some time to work up an assortment. Prices remain unchanged at 60 and 20% on Single, and 70% on Double Strength, in carload lots and upward.

Coke.-There has been no important Coke.—There has been while the pro-change for some time past. While the pro-duction is large, the full capacity is not employed, and it appears to be the intention of the trade to gauge the production by the consumption, and thereby prevent any cumulation of stock. While there has b no improvement in prices, which afford only a limited margin for profit, there is no dis-position manifested on the part of producers to put them up. We continue to quote at \$1.60 per ton, free on cars at ovens, and \$1.70 @ \$1.75 for small foundry orders.

Coal.—Owing to the continued suspension of navigation, the supply of Coal in first hands is large and increasing, while that in the down-river markets is steadily being depleted; hence a rise in the river is anxiously looked for by dealers here and down the river. Rumors prevailed that a strike was contemplated by the miners, but as there has been nothing said about the matter for a day or two, the presumption is that it has either been abandoned or postponed. The quantity of Coal loaded and ready to move on the first rise is large, estimated in round numbers at 8,000,000 to 10,000,000 bushels.

CHICAGO

Office of The Iron Age, 36 and 38 Clark Street, cor. Lake Street, CHICAGO, August 29, 1881.

imported is somewhat stronger at

2.70¢ in store and 2.20¢ at mili; Angle, 3.50¢; T, 3.70¢; Hoop at 3.30¢ rates; Sheet, Plate and Tank, 10 to 14 gauge, at 3.80¢ @ 4¢. The supply of this class of Iron here is light. Dealers who have fair stocks state that they can realize even better prices

Nails.-The demand for Nails continues fair, at the ostensible price of \$3.15 per keg in less than carload lots, but good brands can be had from \$3 up, with the usual discount off.

Steel .- The market for Tool machinery and Steels for agricultural purposes, if any-thing, has slightly improved since our last remain unchanged; we can report sales at \$26 @ \$27, 4 months, for immediate delivery, according to quality.

Muck Bars.—There appears to be no abatement in the demand, notwithstanding the enhanced cost, and the offerings continue light, as few, if any, of the mills have any surplus. We continue to quote good Neutral at \$40, cash, @ \$41, 4 months. Sales have been made at these figures.

Manufactured Iron.—Ramors present

ing or being projected in many localities.

Pig Iron.—The movement continues brisk, and prices are hardening. Consider-able lots have been sold at outside figures, Foundry grades being held more firmly than others. We quote: No. 1 Foundry, \$22 @ \$23; No. 2 Foundry, \$20 @ \$21; Gray Forge, \$18 @ \$19; White and Mottled, \$16 @ \$18; Car-wheel Metal, \$38 @ \$40.

Ores.—We quote: 50 \$ Brown Hematite, per ton, \$2 @ \$2.75; Red Fossil, \$2 @

Miscellaneous Articles. -Old Rails are in better request, and may be quoted firmer.

at \$26 @ \$28; Wrought Scrap, \$20 @ \$25;

Cast Scrap, \$10 @ \$15; Old Wheels, \$28 @

\$30. Scraps are dull and little sought.

Nails-Continue to improve in demand. Mills are crowded with orders at \$3.10 for small, and about \$3 for large lots.

Manufactured Iron .- Bar maintains the Manufactured fron.—Bar maintains the advance strongly. Railway supplies are brisk at quotations. We quote Bar firm at \$2.50 rates; Spikes, \$3.15; Track Bolts, \$4; Trestle Bolts, \$4.50; Fish Plate, \$2.50. There is a good prospect of a small advance in this entire list. in this entire list.

Coal .- The Southern district is being improved in relation to the fuel supply.

other boom will hardly realize such advance as the one which occurred early in 1880, and is still more than maintained. Household supplies have not been as high here since 1875 at this season as now. Run of mine is still furnished at \$2 net ton at

plentiful as the demand would seem to justify. Supplies are still secured by furnaces at \$3 per ton, but new furnaces, unless the proprietors were interested in mines or manufactured their own fuel, would not be able to get supplies. Foundry Coke is 10¢ @ 12¢ per bushe

Steel and Iron Rails .- The business is mostly confined to the product of the Chat-tanooga mill. Steel Bars are quoted at

BOSTON.

August 27.—The Iron market in Boston is in very much the same situation our last week's reports indicate, although there has not been a general advance in prices. Some forms of Manufactured Iron have continued to advance, others have reached to advance to the same structure of the mills at Ironton can no longer ship by boat. The advance in Screw and Strap Hinges, in Nuts, Bolts and Coach Screws was not unlooked for exactly, yet we think it caught most jobbers with few contracts for future delivery. forms of Manufactured Iron have continued to advance, others have remained stationary, and Pig Iron is quoted at the same figures as last week. The fact that Pig Iron does not advance after two weeks of excitement in Bars, would appear to indicate that heavy holders of Crude Iron do not expect heavy holders of Crude Iron do not expect a permanent and large appreciation in values. The tendency undoubtedly is toward higher prices, but the trade for the most part seem disposed to take things coolly, especially as business, though in the main excellent, is confined to the actual needs of consumers. A steady business is certain at more profitable rates than have ruled, and dealers are satisfied at this season of the year with the situation. American Fig.—All grades and brands of American Iron are firm, with steady business. We quote prices at shipping Rails continue in small supply at various and rather nominal rates. We quote American at \$32 and Foreign, at \$30. Manufac-tured Iron.—In all classes of Merchant Iron tured hon.—In all classes of Merchant Iron the utmost activity prevails. Prices are made at the mills and in accordance with the circumstances of individual manufacturers, consumers and merchants conceding to the rates of the manufacturers who have it pretty much their own way, as the advance, though foreseen, was, after all, vance, though foreseen, was, after all, sudden, and caught everybody with low stocks and large orders. It is to be sidered, however, that much of the Bar Iron now being produced is on back orders, and at much lower than current rates, and the actual profit both to mills and dealers is not the following, under date of August 29: able competitors to foreign houses, as well as great as it looks or as quotations would Trade for the past week has been very as to our own inland concerns. While I am as to our own inland concerns. While I am so great as it looks or as quotations would active; the difficulty in getting stock to fill for some time before manufacturers will be orders has been severely felt and is daily on the way to fortunes. At present it looks growing more serious. We now quote Iron from y coth to a toth orders as or some time before manufacturers will be orders has been severely felt and is daily on the way to fortunes. At present it looks growing more serious. We now quote Iron as if prices would hold firm and even continue to advance, but steadiness is more desired than sudden advance, as Foreign Iron in all shapes lies ready to be moved.

Ref. Bar Iron, 1 to 6 x ½ to 1...... B 22 ½ @ 2½ €

"" 1 to 4½ x 1½ to 2..... B 22 ½ @ 2½ € The general statement is probably nearly correct that Manufactured Iron has advanced in this market I-10¢ per pound during the past week, though some quotations indicate a larger rise. Bar Iron. — We quote Refined at \$2.45 for large lots and \$2.50 to small buyers; Horse Shoes, \$4.25 @ \$4.33; Swedish and Norway at \$3.75 @ \$4.33; Swedish and Norway at \$3.75 @ \$4 for Bars, and \$4.75 @ \$5 for Shapes. Plate Iron continues active and with upward tendency and quotations anged. We quote: Tank at \$3.20;

Serap Iron.—The Scrap Iron trade has been somewhat dull during the week, but our previous quotations continue to be maintained, which are as follows: No. 1 Forge Scrap, \$30; No. 1 Wrought, \$24; Heavy Cast, \$20, and Stove Plate \$13.

CHATTANOGA.

Office of The Iron Age. Market and 8th Sts., Chartanoga. August 29, 1881.

The week has been comparatively cool and dry. Reports from Southern cotton districts are more encouraging than for some weeks. Business is reported brisk in all lines. The building trades are muck crowded with orders, reducing competition and sharply advancing prices, especially of finished material. Building now costs fully 30 % more than two years ago. Labor, particularly in skilled lines, is scarce and commands high wages. Merchants are stocking more liberally than was predicted they could in midsummer. Failures are rare. There is little speculation in any form in the South. New railway lines are building or being projected in many localities.

Ple Iron.—The metal trade, 4% (altel in the single prices we quote the strong and 4% (altering the gate was a decimal to the strong and the strong and the strong and calking, 7% (altering 12%) an Zinc is in fair demand at 71/4 @ 71/2 ft. Tin.—Business moderate at quotations. We quote Straits at 21/4 ft and English at 22 ft. Tin. Plates We work of the property of the p quote Straits at 21 ¼ ¢ and English at 22¢.

Tin Plates.—We quote: Charcoal Bright at \$6

@ \$6.25; Ternes at \$5.62½ @ \$6; Cokes,

\$5.50 @ \$5.55; ditto Ternes, \$5.62½ @

\$6.—Commercial Bulletin.

LOUISVILLE.

Messrs. GEO. H. HULL & Co, Commission Merchants, report to us as follows, under date of August 26, 1881: The market is quiet but firm in tone. The furnaces are well sold ahead. There is very little de-mand and no Iron pressing on the market. We quote, for cash, as below:

	FOUNDRY IRONS.
No. : Hangi	ng Rock, Charcoal \$27.00 @ 29.00
No. 2	11 14 25.00 GB 27.00
No. 1 Southe	rn, Charcoal 23.50 @ 24.00
No. 2 "	11 22.50 @ 23.00
	ng Rock, Stonecoal and
Uoke	23.00 @ 24.00
	ng Rock, Stonecoal and
Coke	21.50 @ 22.co
	rn, Stonecoal and Coke. 23.00 @ 23.50
No. 2	21.50 @ 22.00
American	Scotch " 21.00 @ 22.00
Shver Gray.	20,00 @ 21,00
scotch	24.00 @ 25.00
	MILL IRONS.
No. 1 Charce	oal, Cold-short and Neu-

No. 1 Charcoal, Cold-short and Neu-		
tral	91.00 @	22.00
No. 1 Stonecoal and Coke, Cold-short		
and Neutral	19 50 0	20.50
No. 2 Stonecoal and Coke, Cold-short		
and Neutral	18.50 🕼	19.50
No. 1 Missouri and Indiana Red-short.	25.00 @	27.00
White and Mottled, Cold-short and	_	
Neutrai	17.00 @	18.00
CAR WHEEL AND MALLEABLE IN	ONS.	
Hanging Rock, Cold-blast	35.00 @	41.00

hills.

Coke.—This important article is not as Hanging Rock, Cold-blast 35.00 @ 40.00 Kentucky Cold-blast 55.00 @ 40.00 Hanging Rock, W. B. 35.00 @ 40.00 Kentucky Cold-blast 35.00 Weight 40.00 Kentucky Cold-blast 35 W. B. BELKNAP & Co., Iron and Steel Morchants, Nos. 113 and 115 Main street, report to us as follows, under date of August 27: Bars still in active demand and scarce. It is impossible to fill immediate pressing orders, while an easier market is looked for later in the fall. Sheet is still not to be had at all in this market. Nails respond but looking to the manufacturars' late advance.

and stall in this market. Nails respond but slowly to the manufacturers' late advance, and supplies seem abundant, though cut off from cheap delivery by the low river. Even the mills at Ironton can no longer ship by

AUGUST 29.—Pig Iron.—There is a continued fair demand for present use. A few consumers apply for irons at present prices for deliveries through the year, but there is no disposition on the part of producers to contract ahead, except for Car Wheel kinds. The preduction of this class of iron, both cold and warm-blast, seems to be in excess of the wants of Car Wheel makers, who can readily place their orders at present figures and for deliveries through the coming six months. Owing to the strike, Mill Irons accumulated in the hands of furnacemen, but lately the stocks have been greatly depleted lately the stocks have been greatly depleted by it going into uses in foundries till there is nothing left to press the market. The rolling mills here remain idle except "Globe No. 2," running on non union labor, and B. brands of American Iron are firm, with steady business. We quote prices at shipping ports: \$24.50 @ \$25 for No. I X; \$22 @ \$23 for No. 2 X, and \$21 @ \$21.50 for Gray Forge. Small spot lots command \$2 @ \$3 for No. 2 X, and \$21 @ \$21.50 for Gray Forge. Small spot lots command \$2 @ \$3 for No. 2 X, and \$21 @ \$21.50 for Gray Forge. Small spot lots command \$2 @ \$3 for No. 2 X, and \$21 @ \$21.50 for Gray Forge. Small spot lots command \$2 @ \$3 for No. 2 X, and \$21 @ \$21.50 for Gray Forge. Small spot lots command \$2 @ \$3 for No. 2 X, and \$21 @ \$21.50 for Gray Forge. Small spot lots command \$2 @ \$3 for No. 2 X, and \$21 @ \$21.50 for Gray Forge. Small spot lots command \$2 @ \$3 for No. 2 X, and \$21 @ \$21.50 for Gray Forge. Small spot lots command \$2 @ \$3 for No. 2 X, and \$21 @ \$21.50 for Gray Forge. Small spot lots command \$2 @ \$3 for No. 1 X, swift Iron and Steel Works, Mitchell, Tranter & Co., Vicking Rolling Mill Co. and all other large works say that they will not resume operations with union labor. The Cincinnation Rolling Mill Co., under the management of Mr. Samuel Danks, have about completed a full equipment in their works to use the Danks puddler and other fires, run on only No. 2," running on non-union labor, and B. Benjamin & Co., working scrap, using any labor they can get and at prices that are not made public. Globe No. 1, Swift Iron and Steel Works, Mitchell, Tranter'& Co., Vicking Rolling Mill Co. and all other large works say that they will not resume operations with union labor. The Cincinnations with union labor. The Cincinnations with union labor. The Cincinnations with union labor with union labor with union labor. The Cincinnations with union labor with union labor with union labor. The Cincinnations with union labor with union labor with union labor with union labor. The Cincinnations with union labor with union labor with union labor with union labor. The Cincinnation with union labor with union labor with union labor with union labor with union labor. The Cincinnation with union labor with union labor with union labor with union labor. The Cincinnation with union labor with union labor. The Cincinnation with union labor with union l Danks puddler and other fires, run on only large work, but will be silent until equitable arrangements are made with labor

BALTIMORE.

W. N. WYETH, Iron and Steel Merchant,

	Ref. Bar Iron, 1 to 6 x 1/2 to 1 1 10 2/4 10 2/4 10 2/4 11 10 4/5 x 1/5 to 2 1 10 2/4 10 2
1	78 to 2, Round
-1	and Square \$ 10 2% @ 2%¢
1	
1	Hoop Iron, 11/4 wide and upward " 31/4 @ 31/4
1	Band Iron, from 1 to 4 in. wide " 3 @ 346
-1	TAULBO BIOG LIVE 134 ES 4 C
Л	Norway Nail Rods " 61 @ 644
1	Black Diamond Cast Steel " 131/4 @141/40
1	Machinery Steel " 9 @ 954
1	
- 1	
1	Common Horse Nails " 10 @ 14 6
1	Doubline I II amen above 10 bear of 14
л	Perkins' Horse shoes W keg of 100 lbs \$4.37 %
1	Mule shoes

firm, with upward tendency and quotations unchanged. We quote: Tank at \$3.20; Refined, \$3.30; Shell, \$3.85; Flange, \$4.85; and Tubes unchanged at 40 \$ discount from list. Sheet Iron continues active at unchanged

R. C. Hoffman & Co., Iron and Commission Merchants, report the Pig Iron markating in stell rail making, bearing in mind all the facts lately stated.

Reverting to the Iron market, I may add almost as much work in hand as they can there is a considerable amount of activity in

Prices about as follows.	
Baltimore Charcoal Wheel Iron	\$36.00 @ 38.00
Virginia C. B. Wheel Iron	36.00 @ 38.00
Anthracite No. 1	25.00 (20.00
NO. 2	23.00 @ 24.00
NO. 3	21.00 @ 22.00
mottled and White	19.00 @ 21.00
Charcoal C. B. Blooms	65.00 @ 70 00
Refined Blooms	55.00 @ 60.00

HOT BLAST CHARCOAL.
Missouri \$26 co @ 27.00 Southern 26.00 (\$\delta\$ 26.50 Ohio 28.00 (\$\delta\$ 29.00
COKE AND COAL.
Misseuri 26 00 @ 27.00 Southern 23.00 @ 24.00 Ohio 25.00 @ 26.00
MILL IRONS.
Southern 21.00 (2) 21.50 (2) 25.00 (
CAR WHEEL AND MALLEABLE IRONS.
Missouri 28.00 @ 30.00 Southern 35.00 @ 38.00 Ohio 32.00 @ 42.00

Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

(From our Regular Correspondent.) LONDON, ENG., Aug. 15, 1881. THE IRON MARKET

is no stronger as regards the ordinary sorts

of crude descriptions, although there is a brisk business doing in Bessemer and other hematite pigs. Scotch makers' brands are a few pence lower on the week, and warrants are easy. Cleveland pig has been similarly free from violent changes. In the West Coast brands of hematite, on the contrary, a large turnover is current. The activity of the rail mills having administered much strength to these irons, which are very freely sought after and difficult to obtain for early deliveries. Many American inquiries have

been received of late for these pigs, but the makers are, as a rule, strongly indisposed to make long forward engagements, their idea being that they have full command of the situation. They will not sell beyond October save at figures which are 1/6 to 3/6 ahead of the rates now current. They have little surplus stock and the make may be considered to be fairly under control, in spite of some competition in Scotland, Cleveland and South Wales. From Cleveland and South Wales. From your market there are numerous inquiries for steel and iron rails, as well as for Ressemer blooms of 7 x 7 inches. Some of these inquiries are marked "very urgent," and are being cabled, but as regards blooms and iron rails no great amount of business results. The Bessemer mills here are so busy that they do not care to work on blooms at the limits of prices put forward by the agents of your buyers, while as regards iron rails there are not more than two firms able to sell nearer than October. It is not unlikely, however, that the renewed demand for these rails may induce one or two Welsh firms to again run their machinery thereon. Perhaps even their machinery thereon. Perhaps even Cyfarthfa might resume were it not for the new plans which have been adopted there. The steel rail trade is in a very sound and healthy state, even if the work in hand is less profitable than it might be under some conditions. The leading works are all fully occupied, and cannot promise deliveries earlier than October. The Indian State Railways have given out an order for 11,000 tons of 41½ B rails, and there are several tons of 411/2 ib rails, and there are several other good specifications in the market. The rumor that Wilson & Cammell, of

Dronfield, near Sheffield, are about to transfer their business to a point on the West Coast of Cumberland, is again in circulation, and is, I believe, wellfounded. I am informed, on excellent authority, that the firm have agreed to erect new works at Moss Bay, near Workington, where they will re-erect their existing very fine plant, with all the most recent improveof premium or good will. On this point I by quoting the following paragraph from cannot speak with any degree of assurance—indeed, the whole report is said to be 'premature." By the transfer, Wilson & Carmegie, the millionaire iron and steel master and railway proprietor, of Pittsburgh and New York, has just completed by quoting the following paragraph from one of our daily journals: "Mr. Andrew Carnegie, the millionaire iron and steel master and railway proprietor, of Pittsburgh and New York, has just completed per ton on railway carriage on the hematite pig and the finished rails. They have now foreign orders on their books for more friends, who, as his guests throughout, have heavy with him from the time of setting sail than 100,000 tons of rails, so that upon business actually assured the economy would amount to a substantial saving. The transamount to a substantial saving. The transfer is a potential sign of the times, and is portentous for Sheffield and all other inland localities in the heavy trades, wherein the cost of the carriage of materials is a most serious item. These branches of the iron and steel trades will inevitably graviwriting about the steel rail branches, I may say that I hear that the new North Eastern Steel Company, in which Mr. S. G. Thomas is interested, has not as yet quite "fetched" the public to the extent required—and assumed probable. It was proposed to raise £200,000 to begin with. Of this the directors are reported to have subscribed £80,000 and the public £20,000 only. It is possible, of course, that the remaining £100,000 may

be forthcoming from the public in the course of a short time, but it is more likely that the directors will have to subscribe it, if they desire to begin at once. This, I believe, is the case, so that the want of public in-

terest in the matter will not be permitted to mar the prospects of the undertaking. Just now ought to be an excellent time for em-

some kinds of Finished Iron, especially an accession of inquiries and orders from sheets, hoops, bars, galvanized iron and different parts of the home market. There fencing wire. Large American orders for the home market are complaints of some little falling off in the local trade with the United States durbe offers to buy on your account for delivering July, but the balance has not been in the ies extending over the whole of 1882. Old staple articles, as the subjoined figures for rails are stiffer and scarcer, and scrap is each month of the present year show: moving a little. On these points, however, I would refer to your later cabled news as to the course of the market and prices.

SCOTCH PIG IRON

SCOTCH FIG IRON
has in no sense improved during the week, save in the one particular of shipments, which show an increase on the week, as compared with last year, of a few hundred tons. Up to date this year, however, the decrease in foreign and coastwise shipments has reached 102.268 tons, added to which loss must be placed the increase of 36,103 tons in the importations of Cleveland pictures. loss must be placed the increase of 36,103 tons in the importations of Cieveland pig into Scotland. Stocks show the usual growth. Only 568 tons were added to Connal's stores last week, so that makers are palpably holding back a portion of their make in the (vain) hope of aiding the statistical position. The aggregate held by Connal's is now 574,188 tons, as compared with 456,940 tons a year ago. The furnaces blowing number 120, against 101 this date 1880. Ballast pig is 42/6 per ton alongside. Writing from Glasgow, August 13, James Watson & Co. said: "The Scotch Iron market continues very dull, the Scotch Iron market continues very dull, the demand being quiet for the season of the year. On Monday a moderate business was done between 46/4½ and 46/2½, cash, and on Tuesday the price was steady at $46/4\frac{1}{2}$ nor $46/3\frac{1}{2}$ per ton. On Wednesday the market was flat, with transactions down to $46/1\frac{1}{2}$ per ton. Yesterday morning a good business was done between 46/1 and 46/2, cash, and to day the market was stronger, the price rallying to 46/5, at which it closes sellers, buyers 46/4½ per ton. The ship-ments last week were 12,669 tons, as com-pared with 12,260 tons for the corresponding

		No. 1	No. 3.
G. M. B., at Gla	sgow	47/	44/6
Gartsherrie, at	Glasgo	V 54/6	48/6
Coltness,	0.6	56/	48/6
Summerlee.	6.6	54/6	47/
Langloan,	0.6	56/3	49/6
Carpbroe.	6.0	51/	46/6
Calder.	6.6	54 6	48/6
Glengarnock, a	Ardro	san sx/	46/0
Eglinton.	8.6	47/3	44/
Dalmellington.	0.0	47/6	44/6
Shotts, at Leith			49/
Kinneil, at Bo'n	088	47/6	45/6
		h	47/6

remains very quiet, in sympathy with the dullness of Scotch, and partially under the influence of the heavy production in the locality itself. The prices of the day for G. M. B., net cash f. o. b. Tees, are:

io.	X	Foundry	7			۰		41/3 Mottled	 	35/9
	2	44						39/3 White	 	35/3
	3							37/3 Refined Metal		53/3
	4								 	38/3
	4	Forge	0	0	0	0	0	36/3		

Sales of No. 3 are reported to have been effected during the week at 36/9, and buyers, at the moment, have the whip hand. The official market report of the Middlesboro Chamber of Commerce states that some of the foundries have become short of work, but that finished iron in general is in moder ately good request.

TH : WEST COAST

remains prosperous, and has every prospect of a busy autumn and steady activity throughout the winter. The steel rail houses in the district are all well employed, Barrow, In the district are all well employed, Barrow, Moss Bay and Workington each having a large total tonnage on order. Should Messrs. Wilson & Cammell, of Dronfield, remove to Moss Bay, as is reported to be likely, the district would at once become our largest producer of rails, seeing that this firm at their works they works they out of the control of existing works turn out 2500 tous weekly. The smelters are well sold forward, and are at present scarcely able to deliver iron up to their engagements. There is very little reserve stock in consequence. Good mixed Nos. 1, 2 and 3 command 56/@58/ and

makers' brands are	as under	r:	
	No. 1.	No. 2.	No.
Cleator	63/	62/	61
Lonsdale	56/6	35/6	54
Workington	56/6	55/6	54
West Cumberland		56/	55
Lowther	36/6	55/6	54
Moss Bay	59/	56/	55
Distington	56/6	35/6	54
Harrington	56/6	55/6	54
Slway	56/6	55/6	54

been with him from the time of setting sail from America. The journey was begun at Brighton, and it terminated at Inverness. Most of the chief towns and the notable English "sights" upon the route were visited, and at Dumferline the party were received by a procession of 8000 inhabitants, headed by the Provost, for work at the factories had been suspended at midday. Of that town Mr. Carnegie is a native, and upon their arrival his mother, who, though 71 years of age, was one of the party, laid the memorial stone of a public free library given by her son, at a cost of \$8000. This gift follows upon the presentation to the town of public swimming baths, which have cost Mr. Carnegie \$5000. In the evening the party were entertained at a banquet, the Provost presiding. The Mayor of Wolverhampton also entertained the visitors as they passed through the Midlands on their way up Carnegie and his friends re-embark at Liverpool to-morrow (Saturday) with impressions of England acquired during this unique trip which are summed up by the telegram sent on the completion of the journey by Mr. Carnegie from Inverness to Wolverhampton: 'We arrived at the end of Paradise this evening at 6 o'clock.'' Even so!

FROM SHEFFIELD

Steel. Cutlery. Total exports. The deficiency is in special goods, not particularized here.

The first fruits of the agitation against our existing fiscal system is seen in the shape of what is called

THE NATIONAL FAIR TRADE LEAGUE,

which has been formed by a party of influen-tial gentlemen, who declare the league to be outside party politics, and who have explained outside party politics, and who have explained its objects in a manifesto intended to pave the way for further action. They have guaranteed a donation fund of £10,000 a year for five years. Among the principal subscribers are Mr. S. C. Lister, woolen manufacturer, Bradford, £2000: Mr. E. C. Healey, £1000; Mr. David McIver, M. P., £500; and Mr. Sampson Lloyd, £500. Mr. Lloyd is a prominent man of business, and was until recently chairman of the Assowas until recently chairman of the Associated Chambers of Commerce of the United Kingdom. Mr. Healey is the treasurer. I believe he is part proprietor of an influential newspaper.

The manifesto of the new League states,

inter alia: "Convinced of the practical failure of the present system of free trade (so called), which consists of the free admission into the United Kingdom of foreign manufactures and food products, notwith-standing the exclusion of British manufac-tures from foreign States through the operation of heavy, and in some instances pro-hibitive tariffs; convinced that this refusal of foreign nations to receive British manuof foreign nations to receive britism manufactures in exchange for our purchases from them is working most injuriously to the welfare and prosperity of the nation, and endangering the steady employment, fair endangering the steady employment, fair wages and future well being of our working classes, this league is formed to promote, by every means at its command, an extension of trade with all countries, and especially with our colonies and dependencies, pre-pared to deal with the United Kingdom upon the principle of reasonably free inter-change, and to agitate for such fiscal readjustments as shall prevent the products of foreign States which refuse to deal with Great Britain in fair trade from unduly com-The policy advocated is thus explained:
"I. That there be no renewal of commercial treaties unless terminable at a year's notice: so that no entanglements of this kind may stand in the way of our adopting such a fiscal policy as the interests of the empire and the action of foreign nations may render needful. 2. Imports of raw mate rials for home industries free, from every quarter, in order that we may compete suc-cessfully in the sale of our manufactures. 3. Adequate import duties to be levied upon the manufactures of foreign States refusing to receive our manufactures in fair exchange, to be removed in the case of any nation agreeing to take British manufactures duty free. 4. A very moderate duty to be levied upon all articles of food from foreign countries, the same being admitted free from all parts of our own empire prepared to take our manufactures in reasonably free interchange."

Many of the leading organs of public

opinion and the majority of our public men treat the new movement with contemptuous indifference, designating it, when they do Induserence, designating it, when they do allude to it, as being an attempt to restore protection under the thin veil of reciprocity. The Free Traders meet the idea with an air of the most determined and savage hostility, especially John Bright, whose suave temespecially John Bright, whose suave temper and retiring disposition leads him to dub all who favor it "lunaties" pure and simple. On the other hand, many of the smarter and better provincial newspapers, and, I am bound to say, a large portion of the commercial community, openly favor the movement. Some of them do this as a means to an end, their object being to convince other nations that it is no longer safe to treat Great Britain as a country devoted to free AMERICAN IRON MEN ON WHEELS.

I have noticed considerable paragraphing of an American party now in this country, and have refrained from doing likewise so far. Now I am compelled to "come down," and am moved to sum up the whole business by conting the following paragraph from an and an moved to sum up the whole business by conting the following paragraph from an animal state is in older to free trade at all costs. They assume that many of the foreign tariffs, avowedly designed and framed in order to exclude British manufactures, would never have been put in force had not the statesmen of the various paragraph from animal state is in object to treat the state of the states and the state of the states are to treat the conviction that England would taliate, come what might. There may be something in this idea, but I think it is of a negative order. Where the chief difficulty of the reciprocitarians will arise will be when they are asked to substitute a new system for the present one. I am rather inclined to favor some of their views, as a matter of personal opinion, but I am willing to confess that I do not quite see my way to a thoroughly satisfactory substitute. My difficulty is in connection with our transit trade, which customs regulations would inevitably which customs regulations would inevitably hamper and possibly divert to other ccuntries, instead of being brought here for redistribution all over the world, as at present.

PRICES OF METALS. By comparing the subjoined quotations with those given from time to time in my former letters, your readers may be enabled to form an idea of the course of our market in this respect, as well as gain correct information as to net prices at the moment :

	Pe		
		£	B.
ead ore, picked, r cwt. kegs	. :	18	00
g lead	. :	14	15
ea lead		88	IQ
heet lead		15	00
ead pipe		15	10
" tinned inside		17	00
ead encased tin pipe		31	00
omposition gas tubing		87	00
ead wire, to No. 12, 28/, 13 to 16		00	37
and leads, 28/, deep sea leads		00	26
nproved lead washers		28	00
ead nails	-	60	00
in pipe	. 3	12	00
ar fead (3 lbs. and upwards)		15	5
atent shot		17	IQ
ardened shot		13	00
in in ingots	. (96	00
n. bars in 4 cwts. barrels	. (97	00
" 2 cwts, barrels	. (92	IC
umbers' solder		16	20
nman's		56	CC

No.				_		_	_	_	=		=	=	-	-
Brass	solder												ed to	380
Clan re	ed lead (d	reig n	acks	me	m)								. x6	
(4)	Reduce	ed No	9 6	10,	47								15	
R	66	No	. X .	6									. 14	
83	6.6	No	3 "	4										
Na aan	akers' re	d lone	1 3		0.0				0 0	0 0	0 1		. 18	
FIRSON	nglish fla	lee liel	A								-	0	. 10	
Turo E	nglish po	me nu	-1 144	b.	57		e.	C	OB-C	1.86	ъ.		. 17	I
dre E	ngiish po	Wilele	CI III	HIGH	1.R	в.	0 0	0 1		0 0	0 0	10	. 18	
Bood I	oreign fla	me nu	narg	0.,		0	0 0	0 -	. 0	0.0	0 0		. ×7	0
	po	wdere	ю			0 0		0 1		0 0			. 18	X
Pale po	wder litl	narge.								0 0			17	X
	lead, po													T
Dry w	hite lead												20	0
	e ground													1
No.													QE.	X.
	. 2													T
Sheet a	dne, No.	upwa	ard .										19	0
6.6														O
Zine na	dls, 1% u													X
	pelter													O
Remelt	ed spelte	P							1				TA	TO
Anti-fr	iction me	tala	Rabi	vite				ė	72	8	n	d	80	00
	ons												60	00
	rs												70	Off
	tons												135	00
mille	INVESTO			0 0 1		0.1		0 1		0 0	0 0	. 0	-33	30

FOREIGN.

FRANCE.

FRANCE.

(Moniteur des Interets Materiels.)

PARIS, Aug. 14, 1881.—Metals.—The market has been moderately active at irregular prices. Coper has declined a couple of francs. We quote: Chill Bars, 154 @ 157.50 francs per 100 kilos.; Ingots and Slabs, 162.50; Best Selected, 165 25; and pure Corocoro Ore, 157.50. Tin has been looking up; it is now 2.50 francs higher. We quote: Banca and English Refined, 247.50; Billiton, 246.50; and Straits and Australian. 245. Lead gave way 15; we quote the name, 36.75 @ 37.50. Spelter is higher at Havre and lower here; we quote the range, 41.50 @ 43. Iron—In view of the firm attitude taken by the Northern rolling mills dealers have been induced to at length advance their prices also, consumers submitting to it with good grace. Merchant Iron has been selling here at 20 francs the 100 kilos.; at this figure the market is firm. The presumption is that at their next meeting the owners of rolling mills will advance the price to 15.50 at the works. We quote at Paris, large lines. Merchant Iron, 19.50 @ 20; special diston, 20; and Common Sheets, 24 @ 24.50 Old Rails can be had without difficulty at 11.50 Old Rails can be had without difficulty at 11.50 Old Rails can be had without difficulty at 11.50 Old Rails can be had without difficulty at 11.50 Old Rails can be had without affecting the advancing tendency in neighboring countries. The Haute-Marne district reports a steady run of orders at firm rates. At the Meurthe and Moselle blast furnaces orders for Pig Iron are just being renewed at 6 50 for Affinage. Longwy quotes 6.50 @ 6.60. Coal inactive.

BELOU M. (Revue Universelle.)

BELGII M.

(Revue Oniverselle.)

BRUSSELS, Aug. 14, 1831.—Iron.—The price of 13 francs is now readily paid for Merchant Iron, consumers of which seem anxious to secure what they can upon this basis, expecting, as they do, that rolling mills will soon advance their figures in consequence of the abundance of orders dropping in all along. Rolling mills decline to sell on future delivery a long time ahead. Large plates are worth 16 francs. Sheet Iron follows in the wake of the general upward movement; it now currently brings 17, 50. Pig Iron is stationary, but Foundry Pig is, if anything, firmer. The turn which matters in the Iron trade are taking is a most encouraging one; all works are profitably engaged; numerous orders are arriving all the time from France. A Belgium firm has just secured an order from there for Iron turning bridges. We quote: Corners, 14, 50; B.-ams, 13, 50; Sicel Rails, 17; Steel Hoops, 21, 50, and ditto Axles, 23, 50. The fall campaign opens in this country at an earlier date this year, it would seem, than usual, in most branches, which is due, we prevery moderate, and that a good demand is in prospect in consequence of the rather better crops. Speculation we do not perceive any indication of yet; perhaps it is ohecked by the tightening money markets. Metals are steady; we quote: Copper, 155,0; Tlin, 24 @ 242; Lead, 5,5,0, and Spelter, 41,50. Coal is rising; at the last government adjudication an advance of 1 franc was established. Range, 7.50 @ 17.50; coke, 16.

1		x MONTHS.	Ежро	rtation.
Iron Ore	1881. Tons. 550,738 201,974 8,073 2,732 274 206 4,049 184 2,406 4,363	188o. Tons, 574,675 126,995 8,755 2,236 546 187 3,736 3,736 3,736 3,821 4,013 Import	1881. Tons. 170,291 7,648 16,214 2,843 17,684 16,946 71.314 4,576 10,801 9,817	1880, 1TON8, 138,304 7,111 27,669 2,421 14,26 14,111 87,259 5,935 10,425 5,730
	-	Coal		ka

Total	432,883	Exporta	9,184 tions.	11,204	
	Co	oal.	Coke.		
	1880. Tons.	1881. Tons.	1880. Tons.	Tons.	
Prussia Holland	55,126	45,504	1,644	6,430	
England		****		****	
France Luxembourg	2,025,600		77,655	71,235	
Other countries	56,886	65.562	18	301	

HAMBURG, Aug. 16, 1881.—Iron.—Our Dortmund correspondent writes yesterday about the situation there: "There has been some chance since my lask inasmuch as Pig Iron has been looking up, while fluished has remained stationary. But this does not relate so much to foundry Fig. The advance has been comparatively considerable, and the rolling mills would not be able to cover cost, were they to seil at their present rates while paying the now established prices of Fig. Rod Iron is selling at 116 Ø 120 marks, but last week quite a large lot was still obtained at 108. Both dealers and consumers still reast these prices, for they are as yet dishelievers in the duration of the movement. Speci I Iron is wanted for building purposes and ship yards; it therefore brings rather better prices. Thick Sheets have remained unaltered at the comparatively better rates prevailing for some time past. The demand is active. Thin Sheets attract more attention; a great deal thereof is taken to be galvanized. All galvanized ware is more and more extensively consumed; also for roofing thin galvanized Sheets are now largely taken, and in mines they supercede wood for many purposes. Bridge builders and architects resore to galvanizing more and more; steam tubes and hollow ware are also galvanized more frequently than formerly. A couple of y ars ago there were only two or three galvanizing works in all Germany, now there are in the Rhenish provinces and Westphania alone seven of them. Locomotive and car works are likewise busier. The Harkord bridge building concern at Duisburg will henceforward manufacture cars more extensively, after furnishing parts thereof for Java some years since. Coal is favorably situated and dong well." Metals.—Our market has been quiet and without change. Lead is inactive; we quote English Pig. 75, 30 fernan Pig. 15, 20 gi 15, 30 and Spanish, 1750 @ 17, 32; German Pig. 15, 20 gi 15, 40, and Spanish, 1750 @ 17, 50 German Pig. 15, 20 gi 15, 40, and Spanish, 1750 @ 17, 50 german Pig. 15, 20 gi 16, 40, and Spanish, 1750 @

Dusseldorf. Aug. 15, 1881.—Iron.—Firmness in the Fig Iron market continues, with partially rising prices: Foundry Fig is however unfavorably influenced by the weakness at Glasgow. All rolling mill produce remains in request at rising figures. In the Moselle and Sarre a favorable feeling continues to prevail, both in Iron and Coal, and the tendency gets to be firmer. On the lower Rhine and in Westphalia there has either been greater firmness or an advance outright. There is no lack of orders and most of the works require more time to deliver in. The Coal trade is also satisfactory. The general situation in Upper Silesia has gone on improving both as regards iron and Coal. We quote here per ton, Prime Spiegeleisen, 60 de 70 marks; prime Gray Pig, 57 de 8; Luxembourg Pig, 39.50; Charcoal Pig, 80 de 8; Foundry Pig No. 1, 70; ditto No. 2, 64, and ditto No. 2, 57; English Pig No. 3 at Rubrort. 28 do 50; ditto German, 65 de 65; Common Rod Iron, 118 de 125. Rolled Wire for wire nails. 140 de 142. Common Sheets, 173, de 175. Rolled Wire for wire nails. 140 de 142. Cent and Coke here are wanted and tending upward.

HOLLAND.

(Koch & Vilerboom.)

ROTTERDAM, Aug. 16, 1881.—Tin.—The market is quiet without change in prices. Billiton has sold on the spot at 53 guilders, and at this figure more may be had; at ½ less sales would probably not be refused. For Banca 55.25 is the asking price; but no more than 55 is bid.

AUSTRIA.

AUSTRIA.

(Austrian Trade Journal.)

VIERNA. Aug. 14, 1881.—Iron.—Not only is the better feeling here maintained, but it spreads throughout the country. Even Pig Iron begins to be favorably influenced, the demand becoming more active, but prices have not yet improved, stocks being too large still. Merchant Iron has changed no further; consumption is most active, with every prospect of its being kept up. So far makers in Bohemia have not come to an understaning about raising prices still further, but the subject is extensively ventilated. The Styrian rolling mills have not even joined in putting up prices to the point ruling in Bohemia; pressure has been brought to bear on them to do so, but they will no doubt soon follow suit. Vienna, Pesth and Frague absorb a great deal of Structural Iron just now. Sheet Iron is in good position; producers thereof have agreed on raising figures between 50 kreutzers and 1 florin in Styria and Silesia. Some few Ironmasters in Austria seem to apprehend that the present imorovement will not last, and they are therefore averae to raising prices, but the remaining ones do not mind what they say; the demand being good in pretty much all branches, they are of opinion that higher prices are fully justified. They certainly have not put up figures in any extravagant manner yet. Makers of Steel Rails and the larger machine shops are all very busy and have been so for a long time past. We quote Fig Iron, 44 @ 52 per ton at the furnaces; Merchant Iron, 100 % 115; Sheeta, 150 % 180; and Pillars, 175 @ 118 at Vienna. Metals—are steady; we quote: Copper, 70 % 75; Tin, 114,50 % 117; Lead, 17,50 % 26; and Spelter, 17,50 % 19,80. (Austrian Trade Journal.)

American Manufactures in England.

Vice Consul Doyle, of Manchester, says: In my first annual report from Manchester I made the following recommendations: A good article is the best possible agent that American manufacturers can send out, and with a high order of merit in their productions, combined with a low cost and wise methods in bringing them prominently into notice in English markets, there can be no reasonable doubt but that they will not only meet with popular favor, but in good time find large and profitable market here. In the light of larger experience I can

bear witness to the importance of this advice. There is a vast market in Great Britain for various kinds of American manufactures, especially for such as are chiefly made of wood; and to develop this market it is only necessary to make a careful study of the tastes and requirements of the people, and then furnish what popular taste demands. As a rule it will, as a matter of course, take time and patience to secure the adoption of American manufactures; but when a demand is once created, it will largely increase when the article is accepted as suit-

able, reliable and satisfactory.

Articles of inferior workmanship or material do great harm when sent to this market, for the reasons that competing home manufacturers not unnaturally seek an opportunity to point out their defects and enlarge upon their faults; and when it can be shown that they are deficient in strength or durability, a serious check is given to the in-troduction of really first-class productions. For this reason, even if no higher one is sought, the greatest care should be taken to fully test every article intended for a foreign market, and thus prevent fault-finding and prejudices on the part of foreign purhasers as far as possible.

Coke.

1880. 1881. Tons.
Tons. dently having been made where vegetables, chickens, mutton, &c., were scarce, and water very abundant." The opportunity which I tried to turn to account, in the interest of an American manufacturer of "soups," failed utterly, simply because the article furnished was not first-class, as it was recommended to be. An A I article ould have surely led to a large demand for the same from this section, where now it will be a long time before "American soups" will be favorably thought of in the influential circle I have in mind.

This little incident forcibly illustrates the point I have endeavored to impress upon our manufacturers in preparing articles for this market. Cheapness is not so much an object market. in English markets as excellence. Really first-class productions are sure to be used providing the style is popular and the quality good. Former prejudices are gradually yielding to the evidences of real merit in many lines of American manufactures, and now the term "American" has largely ceased to convey the idea of "shoddy" in articles sent over here for sale, as formerly the case to a great extent. The superior quality, taste, and adaptability many of our manufactures render th our manufactures render them most attractive and the demand for our products will increase in a sure ratio with their excellence and perfection in this splendid market in the future.

of coke a day, at \$1.20 a ton. The "boom" came, and in February, 1880, the company was notified that Cochran would furnish no more coke at the contract price, when the company made a contract at \$4 a ton to cover the undelivered amount of the con-Before this contract was filled, coke had fallen to \$1.30. The company claimed as damages the difference between the \$1.20 contract price and \$4, at which it bought. The court held that the contract is what is called a "favored contract," and that the damage is to be determined by the market price of coke at the different dates of delivery, and on this ruling damages were assessed at \$22,000. The company asked for a new trial on this ground mainly, and it has just been refused. This is an important decision in its bearing on contracts, and is contrary to the generally accepted belief as to the rights of a party in filling a con-tract when the party of whom he has bought fails to fill the same.

LABOR AND WAGES.

The Cincinnati Times Star says that the rolling mill owners have resolved to adver-tise for 350 non-union men to take the place of strikers. It also says that the iron and steel company at Portsmouth has a guide mill, puddle mill and a number of puddlers working, all non-union men, and expect to have their entire works in operation this week. This places the Portsmouth mill in the same category as that at Zanesville, which is also run with non-union men.

The miners at Brady's Tunnel, Pa., on the Hempfield Extension Railroad, have gone back to work at the old figures of \$1.25 per day.

Mr. Swearer, president of the Window Glass Workmen's Association, is now in the East, trying to settle the question of wages with Eastern workmen.

There is no foundation for the rumor that there is to be another strike in the coke

ountry soon. The Swedish knebblers at the Roebling Rolling Mill are on strike against a Swedish

The Powell Iron and Nail Company, Chattancoga, have notified their nailers that they will adopt the Wheeling prices and rules for nailing on the 1st inst. This is a voluntary act on the part of the company to induce skilled workmen from the East to locate in the South. Chattanooga, Knoxville and Richmond nail manufacturers have hitherto been paying Eastern prices. This move-ment on the part of the Powell Iron and Nail Company, who will soon have 65 nail machines in operation, and rank among the leading nail works south of the Ohio River, will do oubtless tend to make the price of nailing uniform West and South.

The scale of wages for work in the window glass houses of Pittsburgh that has just been signed, is stated to be the same as that of last year, except on sizes 10 x 12 and under, on which there is an advance of 10 per cent. The basis of the scale is 70 per cent. off window glass list. This scale went into effect on the 15th ult., and includes all

skilled labor, blowers, gatherers and cutters.
Two mills in the Cincinnati district are reported to have resumed work at the prices demanded by the men, one a very small mill at Cincinnati and the other the Terre Haute Iron and Nail Co., which makes only nails.
The Greencastle Iron and Nail Works Co.

The Greencastle Iron and Nail Works Co. have notified their employees that on and after the first day of September they will pay Pittsburgh rates. The men have decided to reject the proposition of the company, and will stop work on that date if the notice is not withdrawn.

The Stove Order Bill, passed by the Pennsylvania statistics and the second se

sylvania legislature at its recent session, goes into effect to day (Sept. 1st.) The new law provides that all persons, firms, companies, corporations or associations engaged in mining coal, ore or other minerals, or manufacturing iron, steel or any other product, shall settle with their employees at least once a month; and pay them in legal money, or by a cash order redeemable for its face value in lawful money, with interest, made payable to employee or bearer, and redeem-able within a period of thirty days by the

the main organization. Further, that the ground by means of an improvised trestle non-union men of Zanesville are to-day

working at Pittsburgh prices.

A Scranton, Pa., exchange says; Some of the collieries in Nanticoke are beginning work without the drivers' and miners' help. It is possible that when the boys get ready to go to work there may be no places for them. Such things have happened. The Fishback Rolling Mill, in Schuylkill

County, Pa., having experienced considerable difficulty in obtaining laborers, has secured a number of German immigrants.

It is reported that a new labor organiza-tion has been formed in the mining region of Pennsylvania. The association is both industrial and political, is called the "Industrial Executive Club," and has been in existence only three mouths. In that time it has organized 25 branches in the mining at has organized 25 branches in the mining districts of Schuylkill County, and averages over 25 men to each branch. The work is all secret, and the officers expect to have 5000 members before the next election.

According to reports from the Navy Department, the trials of the torpedo boat We have already given the details of the steered and propelled by a screw alone withsuit of the Missouri Furnace Company against out a rudder, so that the hull itself becoming

the Estate of John M. Cochran, for a breach of contract in a failure to supply coke. The furnace Company contracted for nine cars aiming it with certainty and precision. The commander of the Alarm is of the opinion that the development of the Mallory screw will be ef great benefit in any system of naval coast defense. The Alarm now appears to be in good condition.

Anti-Tarnish Paper.

A paper for protecting metals from tar-nish or rust is prepared by saturating it with a compound of about equal parts of crude carbolic acid, light oil of coal tar and coal tar. The paper used is a thin tissue, which is passed through the coating and which is passed through the coating and saturating material in connection with and supported by a sheet of stronger material, such as manila paper or felt, or what is known to the trade as "hardware paper," to avoid the breaking, tearing or rending of the thin material. This produces at one and the same time or operation two products—one of light, thin material, and the other at harder thinker stronger material. The one of light, thin material, and the other a heavier, thicker, stronger material. The former of these products is used as a wrap-per for the article to be protected, while the latter or heavier product answers well as a lining for the boxes or packing cases in which the articles are to be packed or stored. The compound is placed in a tank, in which is located a steam coil, for the purpose of heating the compound to about 200° F. The two sheets of paper are wound upon separate rolls, from which they are brought together and passed over a friction roller and under an immersion roller in the tank, where they become thoroughly saturated. The sheets are then passed between two pressure rollers, by which means any excess of the saturat-ing material is removed from the fabric and ing material is removed from the fact.

finds its way back into the tank. There are two sets of heated rollers, of any desired or convenient size, heated by steam. Any desired number of sets or pairs of these heatsired number of sets or pairs of these heat-ing rolls may be used. There are also two hollow rectangular boxes or steam chests, between which and in contact therewith and between the rollers the fabric is passed The hollow rollers and other steam-heated surfaces are kept at a heat of about 200° F., and the paper or other fabric emerges there-from in a dry and clean state. After pass-ing through the heating and drying surfaces the webs of paper are separated, each being wound on a roll. The various rolls or drums, together with the heating rolls and pressure rolls, may be connected together by suitable gearing, or by bands and pulleys for joint action. By using the heavier fabric as a carrying medium for the lighter or tissue fabric, the difficulty of frequent breakage of the tissue fabric is overcome and the cost of production is reduced. An endless belt of medium when caused to pass through the saturating material and through and between the pressure rollers and heating surfaces. The tissue, or light, thin fabric produced by this process is designed for use as a wrapper for gold, silver-plated ware, nickel and brass goods, metal buttons, and, in fact, all bright metals or metals capable of injury from rust or tarnish. The coarser or heavier material well adapted for the lining of the boxes in which the articles are to be packed for shipment or for storage, and is also useful and applicable for various other purposes.

Gathering Rubber in Colombia.

Consul Smith, of Cartagena, has sent to the State Department an interesting sketch of the manner in which the natives of the South American States of Colombia extract milk from the rubber trees and prepare it for the market. Before entering the woods, for the market. Before entering the woods, the rubber hunters provide themselves with guns, ammunition, flour, salt and tobacco. The flour is made from plantains, is generally mixed with corn meal and will keep for ally mixed with corn meal and will keep for months. When the locality for a camp is decided upon, a roof of palm is speedly made, and, the camp being esteblished, every man starts out with a gun and machete, each in a different direction, in search of rubber and game. When a rubber tree is found, a space is cleared from the roots by cutting away vines. the roots, by cutting away vines, under-brush, &c., and the finder moves on in search of other trees, not returning to camp

under the tree to catch the sap, gashes are cut throughout the entire length of it, and the milk that exudes from the gash is carefully collected and deposited in the vat. When it first exudes the sap is of the whiteness and consistence of cream, but it turns black upon exposure to the air and light if not properly watched. The quantity of not properly watched. The quantity of milk put into one hole depends on the size of the trees, their distance from each other, and the strength of the man who is to carry the rubber to the river. When the hole is filled with rubber it is coagulated by adding the root of mechvacan, hard soap, &c. These substances cause the milk to coagulate so rapidly as to prevent the escape of the water. which is always present in the fresh sap, and as the rubber and water will not mix, a piece of rubber coagulated in this way is rubber is strapped on the backs of the hunt-ers by bark thongs, carried by them to the banks of the river and floated to market in

canoes or on rafts.

The annual destruction of rubber trees in The annual destruction of rubber trees in Colombia is very great, and as the people have not turned their attention to planting trees to supply the wastage, there is some apprehension that this industry will be seriously crippled before many years unless the Colombian government enforces its regula-tions against the destruction of forest trees, and compels hunters for rubber to tap without destroying the trees by cutting them down. Consul Smith thinks there is a good chance for profitable investment in this direction. He says there are places on the Sinu River where rubber trees will grow from 8 to 10 inches in diameter in three or four years from the seed. The trees require little attention, and begin to give returns sooner than almost any other. The trees that yield the greatest amount of rubber flourish along the banks of the Sinu and Aslato rivers.

The reports of the Bureau of Statistics show that the value of crude india rubber annually imported into the United States is about \$10,000,000.

Messrs. Maxwell & Silliman, of Allegheny City, have invented and applied practically a method of setting steam boilers which consists in passing the head of the boiler through the fire-front and resting it upon a saddle, mounted upon a pillar provided with anti-friction rollers. Boilers, as built at present, are attached to the front and to the manner, in such manner that there is no masonry in such manner that there is no freedom to expand and contract under the variations of temperature. The consequence is, that the boiler pushes and drags on the is, that the boiler pushes and drags on the fire-front, warping and straining it, or breaking it; the boiler sheets become warped, and breaks are apt to show at the seams, the anchor bolts holding the front to the masonry are wrenched, and the masonry becomes loose and unsafe. To avoid these dangers, the opening in the fire-front is made greater in diameter than the boiler, so that the latter can play freely back and forth. A pillar or ornamental column stands vertacally under the boiler head, in front of or behind the furnace-front to which it is bolted. The top of pillar or column is cored out and contains several rollers, set transversely to the length of the boiler. On the rollers rests a saddle, having its top curved to fit the boiler and its bottom flanged to guide itself upon the column. The saddle occupies such a position that, when resting upon it, the boiler is not in contact with the the front at any point. Set in this manner, the variations of length in the boiler, under the different conditions of temperature, will not have any straining effect whatever upon the front of the furnace, or, through it, upon the anchor-bolts in the masonry—because, resting upon the saddle, the boiler will expand and contract with perfect freedom, and no warping of its sheets, and conequent breakage, will occur.

George H. Clark, who died in Hartford. Conn., recently, at the age of 72 years, was one of the oldest merchants of that city. He was the senior member of the firm of Clark & Co., engaged in the iron business. In early life he held for a time a position in the iron firm of Boorman, Johnston & Co. He was afterward associated with his father, Ezra Clark, and his brother, Ezra Clark, jr., in the same business.

The preliminary hearing of the alleged Molly Maguire murderers was concluded at Molly Maguire murderers was concluded at Uniontown on Saturday. The Court decided to remand Kane and discharge Donahoe; the others were held for trial in the following amounts of bail: McFarland and Pat Dolan in \$5000 each, Collins in \$3000, Flood, Mike Dolan and Regan in \$500. Both of the Dolans obtained bail; some of the others will probably not be achertary. the others will probably not be so fortunate.

According to a report published in the Annales des Ponts et Chaussées, there are now 14,750 miles of railroad in France.



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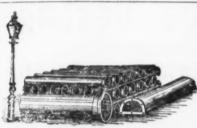
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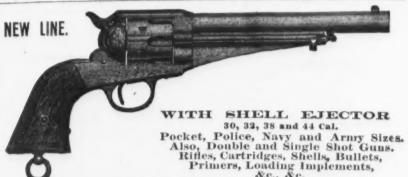
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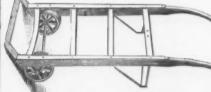
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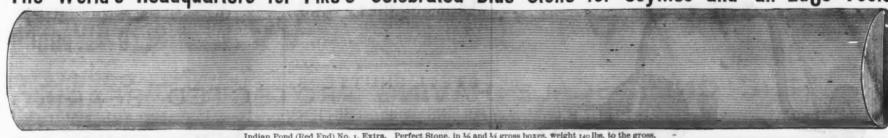
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Reliable, Indian Pond. (Red End), Premium, Union, White Mountain, Letoile, Diamond Grit, Fisherman (Rough), Boss Hacker (Oval), Lamoille, Willoughby Lake, Green Mountain, Black Diamond, Ragg (9 and 10 inch), Mowing Machine, Paper Mill Stone, Vermont Darby, Chocolate,

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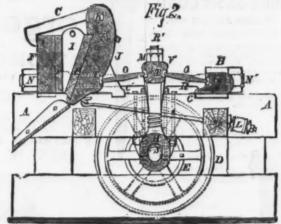
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The most economical and reliable Crusher in use. Superior in all respects to our old style Blake Crushers, and rapidly superseding them and all imitations. For railway ballast, Macadam road making, and crushing of ores of all kinds it has no competitor. This machine dispenses with cast iron frame and pitman of our old forms. All strains

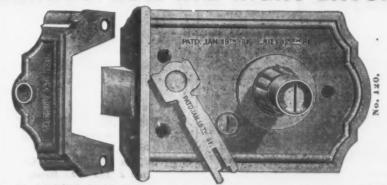
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BARNES' NEW RIM NIGHT LATCH.



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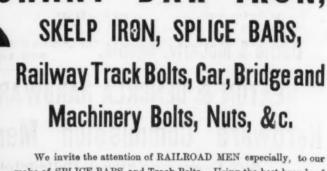
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DEAR SIR: The Drop Hammer we had of you in November last year has given us entire satisfaction. We find your hammer to be a decided improvement upon that of another manufacture used by us, purchased at about the same time. Yours, &c.,

S. W. HALL, President.

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DARTMOUTH (HALIFAX, N. S.), Nov. 25, 1879.
MESSES. STILES & PARKER PRESS Co., Middletown, Conn.

Dear Sires: Replying to your esteemed favor of recent date, we have pleasure in stating our entire satisfaction with the drop hammer purchased from your firm some two years ago. Although we have had at times a little difficulty with the lifting board, we find we are getting all right, and commend it as a good and useful tool.

We are yours very truly.

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Water Driven to any Hight and Distance by Compressed Air.

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The Best Pump for Irrigating, Supplying Railroad Tanks and for Mining Purposes.

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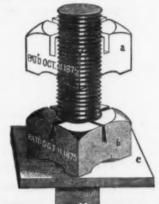


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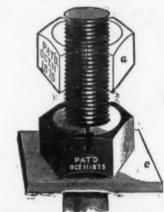
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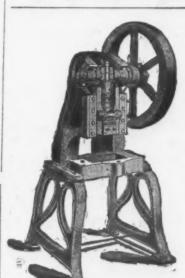


those who use them.

The Boston and Albany Railroad were the first to use the Safety Nut, and are now putting it on to their ENGINES, CARS AND TRACKS.

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We would respectfully refer you to the New York Central and Hudson River Railroad Co., New York. Also, Boston and Albany Railroad Co.: Wilson Eddy master mechanic; F. D. Adams, Supt. car department; W. L. Russell, their engineer and road master; C. Hardy, ass's engineer. Other large railroads are now usually a state of the control of th



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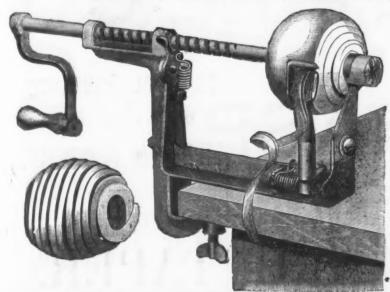
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Power, Screw, Hand, Foot and Drop -

And Special Tools for Tin Can Makers and Sheet Metal Workers.

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reliable, has practically given it to us. As in the past, we shall promptly prosecute all persons infringing upon our claims. We are also sole manufacturers of the Bay State Parer, and all others made under Bay State Patents, and are fully prepared to furnish Parers for large canning and evaporating establishments. Also manufacturers of Turn Table and Lightning Apple Parers, White Mountain

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We now make five distinct styles of Butcher Knives, at corresponding prices. Every blade of every style is warranted in cutting quality equal to the best on earth, and everybody who has seen them knows that the handles are superior, both in style and strength, to

Also, superior hot-water proof Table Cutlery and Shoe Knives.

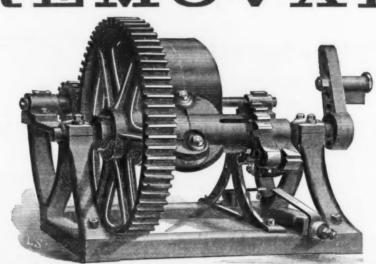
GOODELL COMPANY, Antrim, N. H., U. S. A.

REMOVAL.

NEW HAVEN, CONN., July 15, 1881. DEAR SIR: We have removed our works to our new factory, corner Lloyd and River Streets, Grapevine Point, where we have increased facilities, not only for the production of the

Peck Patent Drop Press,

but also for the manufacture of Drop Dies, Drop and Machine Forgings and Special Machinery.



Our Forging Department is fitted out with the latest improved tools.

We are prepared to quote prices for the manufacture, by contract, of specialties in the Drop Forging line. We have also facilities for furnishing heavy Machine Forgings, such as Cranks, Connection Rods, Drop Die Blocks, Heavy Dies, &c.

Thanking you for past favors, and hoping to receive a continuance of same, we remain, yours respectfully,

BEECHER & PECK.

PROVIDENCE STEAM TRAP COMPANY, Manufacturers of Newton's Patent Steam Trap, Compensating Valve, Oscillating Furnace Bars, and Furnace Economisers.

JOHN TURNER, Treas. To Manufacturers, Bleachers, Dyers, and all Users of Steam: We wish to call your special attention to our Patent Steam Trap, acknowledged by practical engineers and manufacturers to be the best, simplest, most effective and durable Trap ever brought before the public. The simplicity of this Trap consists of doing away with all expansions and contractions, no glands or stuffing boxes, or boths of any description required; no compound cylinders and no copper rods. The cover can be removed at any time to see it work; and if required the discharged water can be elevated from two to thirty feet, so that it can be used for other purposes. They will last from thirty to forty years. As regards frost and snow it makes no difference, as we have had and still have one working in the open air at Washington Mills, Lawrence, Mass., and it has done its work well, never having had any trouble with it, and bids defiance to all weather. That they have been thoroughly tested can be seen by the testimonials given below, of the few that have come to hand:

Washington Mills, Lawrence, Mass., November 18, 1880 —Dean Siz: The Steam Trap we bought of you last August works se send us another as soon as possible. Yours truly, JAMES B. SINER, Mech. Supt.

Office of Washington Mills, Boston, December 24, 188e.

Providence Steam Trap Co.—Gertlemen: Please forward to Washington Mills as on as possible six (6) ½-inch Traps and send bill to me.

HENRY F. COE, Treas.

TESTIMONIALS. Clyde Bleachery and Print Works, River Point, R. I., January 17, 1881.

Mr. R. Newton.—Dean Sm: The Steam Trap we had of you is in successful and ery satisfactory operation. Its simplicity in construction and undoubted durability ill commend it to all who are in want of a superior Steam Trap. We shall order nore when in need of any. Yours, truly,

S. H. GREEN & SONS.

Kendall Manufacturing Co., Providence, R. I., Feb. 1, 1881. Providence Steam Trap Co.—GENTS.: We have used one of your Steam Traps for one time and would say that we find it gives perfect satisfaction.

Yours, truly,

NICHOLAS SHELDON, Treas.

Mr. Robert Newton—Dean Sm: The Steam Traps we bought of you work first-class and give every satisfaction, and appear to be very durable. We think them the best Steam Trap that we have ever had. When in want of more will write you.

I remain, yours, truly, THOMAS BRISTOW, Supt. Cranston Print Works.

Providence, R. I., December 18, 1880,

Mr. Newton.—Dear Sir: We have your Steam Trap working satisfactorily, and can conscientiously recommend it to all. Yours, very truly,
B. COLLINGHAM, Supt. Atlantic Mills.

ROBERT NEWTON, C. E. M. E., Inventor and Patentee, Providence, R. I. OSCILLATING FIRE BARS. PATENT

We wish also to call your attention to R. Newton's Patent Oscillating Fire Bars, which for durability, economy and application are acknowledged by all practical engineers that have seen them up to the present time to be the best ever brought before the public. This invention the patentee has labored at more or less since 1851. These bars have long been wanted, and their use will at once prove their efficacy as an economiser of fuel and labor. These bars can consume from four to twenty-six pounds of coal per square foot of grate, per hour, and not warp; and the apertures can be kept clean so that they can get a regular supply of oxygen, which is the lifegiving power of caloric. They can be applied to all kinds of boiler surfaces (except vertical), and can be fitted to the furnaces in about five hours. Testimonials can be forwarded, if required, to show that they are now in use

SOME OF THE ADVANTAGES: These bars allow the use of inferior coal; evaporating power is greatly increased. This is a great boon where boiler power and space is limited. This advantage cannot be over-estimated in the case of marine boilers. The oscillating of the fire bars both cuts and lifts the slug, and clears the apertures at the same time. The bars give four motions in one oscillation, and cannot get out of order. They are also free of expansion and contraction, both longitudinal and transversal, and however careless the stoker may be he cannot leave them so as to take any harm. They are so cast, and of such metal, that they are the most durable bar ever brought into use. All now in use are very much approved. They are very simple and cannot get out of order. Their cost is so reasonable that they come within the reach of all. The company are now granting licenses to several firms to make and apply them, and are open to arrange with other and participant of models. ROBERT NEWTON, C. E. M. E., Inventor and Patentee. All communications should be addressed to PROVIDENCE STEAM TRAP CO., P. O. Box 1213, Providence, R.

THE OHIO GRINDSTONE CO. GRINDSTONES

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ented in New York by LAMSON & GOODNOW MFG. CO.





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Combines Strength,

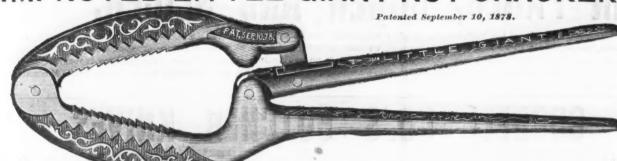
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The DEXTER SPRING is the most perfect Carriage Spring ever invented. Wherever it is known it is rapidly superseding all others for pleasure vehicles. It i especially recommended for use on the rough roads of new countries, as its peculiar construction relieves the strain on the vehicle and shock to the passenger, while the high Noiseless, grade of material used reduces the probability of breakage to a minimum.

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IMPROVED LITTLE GIANT NUT CRACKER.



They will Crack Hickory Nuts with Ease.

With these Nut Crackers a child three years old can crack hickory nuts as well as a grown person, and no cracked fingers as with a hammer. Auxiliary Smaller Jaws for small nuts.

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THE NEW HERCULES NUT CRACKER.



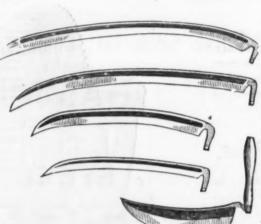
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Easily worked. Easily cleaned. Will not get
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But with capacity to cut 100 pounds Pork an hour.

Will send one as sample on receipt of \$3.00. Our No. 1 Butcher, for hand or power, will Our No. A Butcher for power, will cut 100 ant our Cutters to do the work mor

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The Blades are made of JESSOP'S CAST STEEL, with milled Points and Shanks, making them interchangeable, and are warranted.

This Driver has four Blades from Inch to Inch in width.

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Scoops, R. H. BROWN

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The most popular Horse Shoe in the world. Will outwear three Iron Shoes.

Dunning Steel Finished Horse Shoes may be ordered in any quantity, packed, assorted sizes to suit, from the following hardware houses:

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Are forged from a solld bar of steel. Afford a firm level bearing, thereby securing to the borse the most wural position for comfort and speed. Is a self-cleaning shoe, and will not "ball up," Equally good for summer or winter use. Will prevent horses from "calking" or growing corns. Can be resharpened as readily as

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OPINIONS.

I do not hesitate to give it as my opinion that it tombines more excellences than any I have before them. It provides a solid base under all circumstances, for the horse while standing or traveling; has no rocking motion while the animal is turning, and possesses eleven calks to protect him from alling. I have never seen the inventor of this improvement, but I desire, in the interest of the no-lest animal living, to thus thank him for the good his shoe is likely to bring him.

President the American Society for Prevention of Cruelty to Animals, New York.

Cruetty to Animais, New York.

Office of North Chicago City R. R. Co., |
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Chicago Steel Horse Shoe Co.—Gents: We are
using your "Dunning Steel Horse Shoe" on our
car horses, and find they last us from three to four
mouths before being worn out. We drive our
horses about 16 miles a day—half over cobble
stones and balance pavement. We consider them
the best shoe made.

M. W. SQUIRES, Supt.

Nos. 56 to 68 W. Van Buren St., Chicago, Feb. 26, 1881. Versed the Dunning Steel Shoe Co.—Gents: I have sed the Dunning Steel Shoe on my horses with reat satisfaction. I regard it as the most practial and valuable improvement yet made in Horse hoes. I am sure they will commend themselves of owners and shoers. Yours truly,

A. W. KINGSLAND,

Secretary Northwestern Horse Nail Co.

Send for sample keg, assorted sizes. Full descriptive catalogues sent on application. Manufactured exclusively by

THE CHICAGO STEEL HORSE SHOE CO., Chicago, Ills., U. S. A.

THE HARTFORD HAMMER CO.,

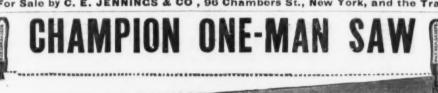
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Adze Eye and Bell Faced Nail Hammers, Machinists' and Blacksmiths' Hammers.

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HAND, PANEL, AND RIP SAWS,

AND KINDRED GOODS;

Also, MILL, CROSS-CUT AND CIRCULAR SAWS. BAND SAWS A SPECIALTY.



Carriage, Tire, Machine, Plow, Stove and Spring Bolts, Coach and Bed Screws, &c. [BIRMINGHAM, CONN. Flagler, Forsyth & Bradley, Agents, 298 Broadway, New York.

Armstrong's Improved Adjustable Stock and Dies FOR PIPE AND BOLTS.



Tapped to the U. S. and Whitworth Standard Gauges. Adjustable to all variations in the size of filtings. Can be resharpened without drawing the temper by simply grinding them. Possessing practical advantages appreciated by all mechanics. Circular and Price List sent free on application.

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MEAT CHOPPERS. Lard Presses, Sausage Stuffers,

Blacksmiths' Drills (three kinds), Improved Blacksmiths' Tuyere, Hub Boxing Machines, Hollow Augers, Lightning Fodder Cutters.

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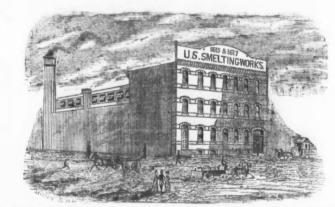
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THE BEST NUT TAPPING MACHINE ATEST IMPROVEMENTS PURDY MACHINE CO

UNITED STATES SMELTING WORKS,



TYPE AND METALS. BABBITT

Brass Castings and Solders of all Kinds.

PIC AND BAR TIN. PIC AND BAR LEAD.

Pig Brass and Copper, Spelter, Antimony, &c.

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PHILADELPHIA.

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Gentlemen .- This cut illustrates our CAST IRON





Sample sent if desired. PRICE, \$12 PER DOZEN.

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(GREENFIELD CUTLERY CO.)

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MANUFACTURERS OF



Fine Table Cutlery.

Solid Handled, Bone, Ivory, Rubber and Wood, Solid Steel Silver Plated.



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Also, FLAT SHOES with

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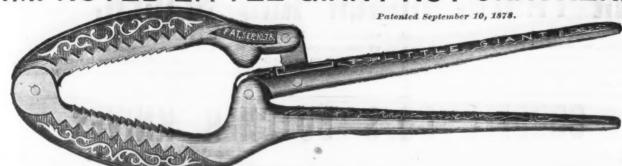
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IMPROVED LITTLE GIANT NUT CRACKER.



THE NEW HERCULES NUT CRACKER.

They will Crack Hickory Nuts with Ease.

With these Nut Crackers a child three years old can crack hickory nuts as well as a grown person, and no cracked fingers as with a hammer. Auxiliary Smaller Jaws for small nuts.

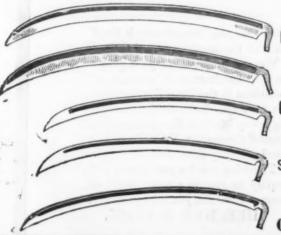
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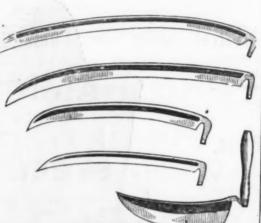


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Kieser's Gem. Kieser's No. 55

Double Shearing Cut. Solid Cast Steel Blades.

Patented Sept. 14, 1880. Family Meat Cutters are the best made.

Earnily Meat Cutters are the best made.
Every family should have one. Will thoroughly
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Every Druggist should have one for cutting
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Easily worked. Easily cleaned. Will not get
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Send a postal for Circular with testimonials.
Will send one as sample by express upon receipt
of \$2.00.

Are Made on the Same Principle as the Gem Meat Cutters,

But with capacity to cut 100 pounds Pork an hour.

Will send one as sample on receipt of \$3.00. Our No. 1 Butcher, for hand or power, will Our No. A Butcher for power, will cut 100

Also Sole Manufacturers of

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Established 1855.

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Scoops, Coal Hods, &c.,

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Send for Price List.



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SCREW DRIVER. IMPROVED

And Case containing Handle and Set of

SCREW DRIVERS

The Blades are made of JESSOP'S CAST STEEL, with milled Points and Shanks, making them interchangeable, and are warranted.

This Driver has four Blades from Inch to Inch in width.

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Expansive Bit,

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Cash Capital, - - \$600,000 Cash Assets, over - - 5,800,000 Surplus to Policy Holders 1,435,000

LIFE AND ENDOWMENT POLICIES

Of all safe and well-approved forms. Cash Insurance at low Cash Rates. Plain contract, ample security, prompt payment, and equitable surrender value.

Life Policies in Force, over 12,000 Claims Paid in Life Dep't, \$1,750,000

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By the Year or Month, insuring against death by accident, or Weekly Indemnity in case of wholly disabling injury. Cost but little money, and written by Agents at short

No. Accident Policies issued, 690,000 Ne. Accident Claims paid, Amt. Accident Claims paid, \$4,375,000

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Civing complete protection for life and limb under one contract. Costs about the same as ordinary mutual rate for Life Policy

REGISTERED ACCIDENT TICKETS.

Insuring \$3000 against fatal accident, or \$15 a week for total disability, at 25 Cts. a day, or \$4.50 for 30 days. Sold at Railway Stations and at Agencies generally. Much used by travelers, but not limited to accidents of travel.

Money, Time, Life are lost by Accidents.

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DUNNING FINISHED STEEL HORSE SHOES.

The most popular Horse Shoe in the world. Will outwear three Iron Shoes.

Dunning Steel Finished Horse Shoes may be ordered in any quantity, packed, assorted sizes to suit, from the following hardware houses

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Are forged from a solld bar of steel. Afford a firm level bearing, thereby sec to the horse the most stural position for comfort and speed. Is a self-cleaning shoe, and will Equally good for summer or win ter use. Will prevent horses from "calking" or growing corns. Can be resharpened as readily as

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OPINIONS.

I do not hesitate to give it as my opinion that it tombines more excellences than any I have before een. It provides a solid base under all circumtances, for the horse while standing or traveling; as no rocking motion while the animal is turning, and possesses eleven calks to protect him from alling. I have never seen the inventor of this improvement, but I desire, in the interest of the nodest animal living, to thus thank him for the good also shoe is likely to bring him.

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o owners and shoers. Yours truly,
A. W. KINGSLAND,
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Send for sample keg, assorted sizes. Full descriptive catalogues sent on application. Manufactured exclusively by

THE CHICAGO STEEL HORSE SHOE CO., Chicago, Ills., U. S. A.

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Adze Eye and Bell Faced Nail Hammers, Machinists' and Blacksmiths' Hammers. The attention of the trade is called to this line of goods as superior in style, quality and workmanship to any in market.

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WITH PATENT ADJUSTABLE ATTACHMENT. The only Saw that can be adjusted for either a One-Man or a Two-Man Saw We make the following lengths, 3½, 4, 4½, 5 feet. Send for sample.

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Tapped to the U. S. and Whitworth Standard Gauges. Adjustable to all variations in the size of filtings. Can be restarpened without drawing the temper by developed to all variations in the size of resharpened without drawing the temper by simply grinding them. Possessing pra-appreciated by all mechanics. Circular and Price List sent free on application. Manufactured by F. ARMSTRONG, 30 Sterling St., Bridgeport Conn.



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Lard Presses,

Sausage Stuffers, Blacksmiths' Drills (three kinds), Improved Blacksmiths' Tuyere, Hub Boxing Machines, Hollow Augers, Lightning Fodder Cutters.

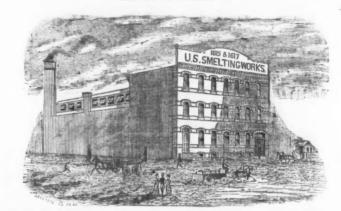
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UNITED STATES SMELTING WORKS,



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PIG AND BAR TIN. PIC AND BAR LEAD.

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Gentlemen .- This cut illustrates our CAST IRON Furnace Lamps which are superceding entirely the Tin Lamps A No. 1 article in every resp

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PATENT CONCAVE FORGED OX SHOES.

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PIG IRON AND NAILS,

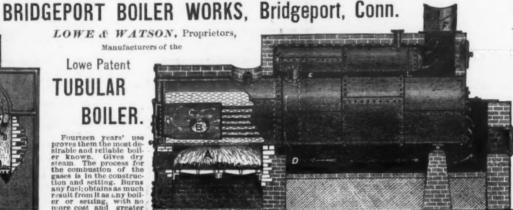
Manufacture the Celebrated Brand of

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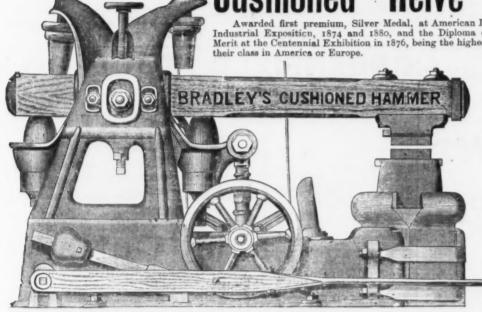
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BRADLEY'S

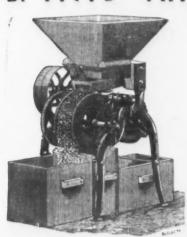
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IN THE WORLD.

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The accompanying cut represents a view of a recently invented machine for separating iron turnings, filings, &c., from brass, composition and other material

Its capacity and utility for this kind of work surpasses anything ever before offered to the outbile, doing its work most thoroughly, and with the least amount of labor or trouble. The machine is not only a great labor-saving device, but brass stock treated with it is much improved, as it is thoroughly cleansed that it may be used for the best of work.

The rachine may also be used for separating iron from emery.

TESTIMONIALS.

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Boston, Jan. 18, 1879.

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From the Benedict and Burnham Mfg. Company, Workster, Coss., Aug. 10, 1879.

Fzra Sawyer, Fag., Worcester, Coss., Aug. 10, 1879.

Materbury, Conn.

Waterbury, Conn.

Worcester, Mass. Sept. 4, 1879.

To Whom it may concern: We have had in use for seven months one of B. Hits's Patent Magnetic Multiply and the patent of the patent water by the seven ment one of B. Flits's Patent Magnetic Multiply and the patent of the patent water by the water by the patent water b

CHAS. BENEDICT.
From Union Water Meter Company, Worcester,
We have used one of B. Fitts Patent Magnetic Metal
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it as the best thing we have ever seen for separating
metals, and have no doubt it has more than paid for
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Worcester, Mass.—Dear Sir: We
have used your Magnetic Metal Separator several
months; it works to our satisfaction, and we cheerfully give it our recommendation. Yours truly
Workester, Sept. 1, 1879.
It van Duskn, Agt.

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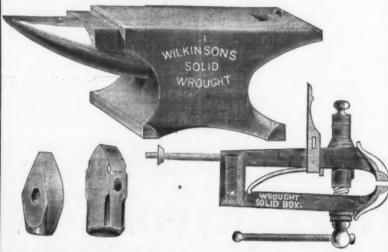
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McLaren John, Hoboken, N.J.
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Bartlett Frederick, Freeport, Illa.
Butler Door Spring Co., Cleveland, O.

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Weilpole Emery Mills, Boston, Mass.

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La France Fire Engine Co., Elmira, N. Y.

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Twiss Nelson W., New Haven, Conn.

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Cooke & Co., 6 Cortlandt, N. Y.

Forge Company, Brooklyn, E. D., N. Y.

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Klidder Slide Door Hanger Co., Romeo, Mich.
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Graham & Haines, 113 Chambers, N. Y.
Heaton & Deackia, 67 Commerce, Phila.
Hymes David & Co., 92 Church, N. Y.
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Jonnings C. E. & Co., 04 Chambers, N. Y.
Lioyd, Supplee & Watton, 625 Market, Phila
Shepard Sidney & Co., Buffalo N. Y.
Hardware Imperiers.
Boker Hermann & CS., 101 Duane, N. Y.
McCoy & Sanders, 132 Duane, N. Y.
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Finterprise Mrs. Co., Phila.

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Fingler, Forsyth & Bradley, see Broadway, N. Y. 49
Fingler, Forsyth & Bradley, see Broadway, N. Y. 49
Fingler, Forsyth & Bradley, see Broadway, N. Y. 40
Findley France, Co., 19
Lioyd, Supplee & Waiton, cost Market St., Phila., Pa. 77
Lioyd, Supplee & Waiton, cost Market St., Phila., Pa. 77
Hiller's rails Co., 72 Chambers, N. Y. 10
Shepard Hardware Co., Fuffalo, N. Y. 10
Shepard Hardware Co., Fuffalo, N. Y. 10
Trenton Lock & Hardware Co., Trenton, N. J. 97
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Davis Wm. L., Chelsea, Mass. 30
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Wollensak J. F., Chicago, Ill. 10
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Covert Mrs. Co., West Troy, N. Y. 20
Covert Mrs. Co., West Troy, N. Y. 20
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Globe Mfg. Co., Middletown, Conn...
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Holt Hiram & Co., East Wilton, Me. Heater and Purifier, Feed Water, Lowe & Watson, Bridgeport, Conn.... Heel Stiffeners. Hinges. Stanley Works, New Britain, Coan. Hoes. Bruce George W., 1 Platt, N. Y... Bruce George w., i klass, had been the Ringers. Gering & Quinlan. Decatur, Ill. Hill H. W. & Co., Decatur, Ill. Hoisting Engines, Makers of. Crane Bros., Mfg. Co., Chicago, Ill. The Norwalk Iron Works Co. S. Norwalk, Machines.

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Lyon E. & Co., 470B Grand, N. Y..... Injectors. Jenks James, Detroit, Mich. Insurance, Boiler.
Hartford Steam Boiler Inspection & Insurance Co Insurance, Life.
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Lundell Chas. G. (Swedish), Boston, Mass.

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Birmiogham Rolling Mill Co., Louisville, Ky.
Bitton Iron and Steel Co., Cleveland, Ohio.,
Carnegle Bros. & Co., Limited, Pittaburgh, Pa.,
Elbs Iron and Bolt Co., Limited, Pittaburgh, Pa.,
Kirsparick & Co., Pittaburgh, Pittaburgh, Pa.,
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Rome Merchant Iron Mills, Rome, N. Y.
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Rowland Wm. & Harvey, Philadelphia
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Williams, Long & McDowell, Pittaburgh, Pa.
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Etting Edward J., Philadelphia, Pa.
Fox & Drummond, 68 Weil, N. Y.
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Bailey J. F. & Co., 52 Wall, N. Y.
Field Aifred & Co., 53 Chambers, N. Y.
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Hersahelm L., 105 John, N. Y.
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Wister L. & R., 230 South Fourth, Philadelphia. Richardson J. O., 732 Dock, Philadelphia.
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Naylor & Co., 90 John, N. Y.
Naylor & Co., 90 John, N. Y.
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Clark E. W. & Co., Philadelphia, Pa.
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Morchant & Co., Philadelphia. 39
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Branicoturers of, Greenfield, Mass.
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Cleveland Rolling Mill Co., Cleveland C.
Gautier Steel, Johastown, Pa
Midvale Steel Co., Nicetown, Phila, Fa.
Miller, Metcalf & Parkin, Pittaburgh.
Naylor & Co., 99 John, N. Y. iller, Metcalf & Parkin, Pittaburgh, sylor & Co., og John, N. Y. s., annsylvania Steel Co., se S. 4th, Phila. siladelphia Seel Forge, Philadelphia, Ph. owland Wm. & Harvey, Frankford, Phila. underson Geo. & Co., o Gold, N. Y. loenberger & Co., Pittsburgh, Pa., mith, Sitton & Co., Pittsburgh, Pa., see, Ninick & Co., Pittsburgh, Pa., see, Ninick & Co., Pittsburgh, Pa., see, Ninick & Co., Pittsburgh, Pa., see, Philadelphia, Pa., see, Philadelphia, Ph., be Siemena Anderson Steel Co., see Steel Co. of Scotland, 7a Pine, N. Y. ardlow S. & C., Sheffield, England. Steel Spiral Springs, Manufacturers of Cary & Moon, 234 W. 29th, N. Y. Chatilion John & Sons, 91 and 93 Cliff, N. Y. Stoppers, Black Lead. Taunton Crucible Co., Taunton, Mass. Hiorage. Union Storage Co., Pietsburgh, Pa... Sirops, Razor.
J. R. Torrey Razor Co., Woromicz, Mass. Stove Boards, Manufashingrs of.
Ansonia Brass and Copper Co., 26 22 Claff N. Y. 2620 Stove Repairs. Metzner W. C., Chicago, Id... Stove Trucks. Tucker & Dorsey, Indianapolis, Ind.. Tricks,
American Tack Co., Fairhaven, Mass,
Cobb & Drew, Plymeuth, Mass,
Dunbar, Hobart & Whilden, 39 Warts, N. Y.
Field A. & Sons, Taunton, Mass,
Grundy & Disseway, 16: Greenwish, V. Y.
Phillips E. & Sons, South risnover, Mass,
Shelton & Co., Birmingham, Ot. Taps and Dies.
Carpenter J. M., Pawtucket. R. I.
Sanning, Maxwell & Morse, in Charles, Wells Bros., Greenfeld, Mass.
Wiley & Russen atz. Co., Greenfeld, Mass. Testing Machines.
Olsen Tinius & Co., Philadelphia, Pa
Richle Bros., Philadelphia. Tin Plate. N. & G. Taylor Co., Philadelphia. Tin Ware, Stamped and Japannea Block David, 69 Bayard, N. Y.... Shepard Sidney & Co., Buffalo, N. Y.... Tire Uperfiters. Little Glant Mfg. Co., Miliport, N. Y., Trombly E. C., Plattsburgh, N. Y.... Tool Chests American Tool Co., 116 Chambers, New York. Tools, Molders'. Tools. Steam and Gas Fitters, Armstrong F., Bridgeport, Ct..... Saunders' Sons, Yonkors, N. Y.... Tree Pruners. Tube Expanders.
Dudgeon Richard. 24 Columbia. N. Y..... Tubes. Telescope. R. T. Deakin, Philadelphia, Pa..... Tubing.
Merchant & Co., 407 Market, Phila... Tuyere Iron. Morgan A. W., Indianapolis, Ind...... Twist Drills, Makers of. Morse Twist Drill & Mach. Co., N. Bedford, Mass...? Morse Twist Drill & Macs. Co., N. Bedford, Mais.
Uphoisterers' Goods.
Turner & Seymour Mfs. Co. & Raade, N. Y.
Valves, Gas. Water and Steam.
Curtis Regulator Co., Boston, Mass.
Luciow valve Mfs. Co., Troy, N. Y.
Mohawk & Hudson Mfs. Co., Waterford, N. Y... Vises.

Hower Hermann & Co., for Duane, N. Y.
Hower Hermann & G., Burlington, Vg.
Howard Iron Works, Buffalo, N. Y.
Miliers Falls Co., 74 Chambers, N. Y.
Newlin & Yardley, Philadelphia.
Prentias Vise Co., 25 Dey, N. Y. Wheels, Hailroad.

Bowler & Co., Cleveland, O.....

Whitney A. & Sons. Philadelphia Whetstones. Pike A. F., Pike Station, N. H. White Lead.

Brooklyn White Lead Co., 183 Front, N. Y.
Colgate Robt. & Co., 287 Pearl, N. Y.
Jewett John & Sons, 182 Front, N. Y.
Lewis John T. & Bros., 231 S. Front Phila., Fa. Window Balances. Hugunin R. B., Hartford. Ct... Window Cleaners. Window Springs, Makers of. Hammond W. S., Lewisberry, Pa.... Hammond W. S., Lewisberty, Pa.

Wire, Manufacturers of,
Cary & Moen, 24 W. 20th, N. Y.
Cleveland Holling Mill Co., Cleveland, Ohio,
Gautler Steel, Johnstown, Pa.
Gilbert & Bennett Mrg. Co., 272 Pearl, N. Y.
Harrison Wire Co., St. Louis, Mo.
Hern-helm L., 105 John, N. Y.
Howard & Morne, 45 Fulton, N. Y.
Frentiss & Choate, 45 Fulton, N. Y.
Frentiss & Choate, 45 Nassau, N. Y.
Washburn & Moen Mrg. Co., Worcester, Mass.
Leslie A. C., Montreal. Wire Nails.

Blake & Johnson, Waterbury, Conn
Dunbar, Hobart & Whidden, 39 Warren, N. Y.
Field A. & Sons, Taunton, Mass.
HP. Nail Co. Cleveland, Ohlo. Wood-Working Machinery.
Rogers J. F. & O., 107 Liberty, N. Y......
S. A. Woods Machine Co., 91 Liberty, N. Y. Wrenches, Manufacturers of.
Bemis & Call Hdw. & Tool Co., Springfield, Mass. 123 36
Coos A. G. & Co., Worcester, Mass.
Coos L. & Co., Worcester, Mass.
Glrard Wrench Mg. Co., Girard, Pa. 66 Wringers.
Alexander T. J. Boston, Mass......
Peerless Wringer Co., Cincinnati, O... GEORGE W. BRUCE, 1 Platt St., New York, Proprietor of the Atlantic Screw Works,



And Agent for the Florence Tack Co. and C. A. Maynard.

NEW YORK WHOLESALE PRICES, August 31, 1881.

METALS.	
IKON.—DUTY Bars. 1 to 1560 W B; Shee Hood and Scroll. 15 to 1560 W B; provided, th of the above from shall pay a less rate of duty per cent. Pig. 87 W ton; Polished Sheet, y Wrought Scrap, 88 W ton: Cast Scrap, 86 p Railroad 700. 3 100 Bs. Boller and Flate, 1560.	t, Band at none than 30
per cent. Pig, 87 # ton; Polished Sheet, 9 Wrought Serap, 88 # ton: Cast Scrap, 86 p Railroad 70c. # 100 Bs. Boller and Flate, 146c.	er ton.
Foundry No. 1 # ton 24.50 1	@ 25.00
DOORS NO.	
Eglinton. \$\pi \text{ ton } 21.00 \\ Carnbroe \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	@ 24.00
Contract of the Contract of th	(6) 23.00
Entise. From \$48.00 Steel (at mill) (1882 delivery). → ton 45.00 Cla Raits Ts. → ton 27.504 Ola Raits D H	@ 49.00 @ 56.00
67 Aought Scrap V ton28.00 (Bar Iron, irom Store, —	@ 30 00
	B 2.40
1 to 2 in. round and square	@ 2.70
f to z in. round and square. 算 取 2.6 1 to 6 in. x 4 to z in. 1 to 6 in. x 4 to z in. 1 to 6 in. x 4 to z in. 1 to z in. 1 to z in. 1 t	@ 2.8c
Sheet Iron.	on 0380
	G. rican.
25 to 26	534
tiatvanised, to to so # D 7%0	qual.
Gaivanised, 10 to 20 # 10 74(0 to 21 to 22 # 10 to 25 #	7360 80 8360
Patent Pinnished. # B 10/40 ; B Russia. 11/46 American Cold Rolled. # B 5 6	
American Cold Rolled	12 60 1
OFFER. DUTY: Pig. Bar and Ingot, se; Old per 4c h; Manufactured (including all articl which Copper is a component of chiefvalue), 45 valorem.	s ad
valorem. American Ingot	1
Braziers' Copper, ordinary sizes, 1602, per sq. ft., and over per lb. Braziers' Copper, ordinary sizes, under 16 oz.	200 1
ft., and over per lb. Brazlers' Copper, ordinary sizes, under 16 oz., and over 12 oz., # sq. ft. # sq. Brazlers Copper 10 oz and 12 oz., # sq. ft. # sq. Circles less than & is. n diameter # sq. Circles & in, disnester and over # sq. Concatter Fire Box Sheets. # sq. Sheathing Copper, over 12 oz. # sq. ft. # sq. Bolt Copper.	b 280 b 300
Circles less than 84 in. n diameter	320 I
Segment and Pattern Success # 1 Locomotive Fire Box Sheets # 5 Sheathing Copper, over 12 03. # sq. ft # 7	240 I
Bolt Copper. # # 8 Copper Bottoms # 8 No Copper is Sheathing except 147 o thebes and to exceed 34 oz. to the sq. ft.	nma .
TINNING.	i i
4x/8	t oc I
O'NRILL'S PATENT PLAYSORED COPER.—Net. 14 and it ox. and heavier \$\psi\$ \text{ b} \text{ 36} \text{ 40} 12 ox. and lighter \$\psi\$ \text{ b} \text{ 370} Boiler Sizes. 7 in., 14x52. \$\text{ b}\$ \text{ 10}, 14x56. \$\text{ 11}, 14x56. \$\text{ 10}, 14x56. \$\text{ 10}\$ 4 and 16 ox. and heavier. \$\psi\$ \$\psi\$ 56c By the case. \$\psi\$ 26 (And all sizes not over 20 in. wide.)	30
12 0s. and lighter \$\P\$ 370 \$\cdots\$ \$\P\$ Boiler Sizes.	500 A
4 and 16 oz. and heavier. # \$ 56c By the case. # 2 (And all sizes not over so in, wide, 24x48x30x60.	250 8
14 and 16 os. and heavier	38c
Brown & Sharp's Gauge the Standard for Wite.	Ola
EFORE & SHAPP & GRAUGE THE SHARKER TO WIFE. ERASS MANUFACTUREES' FRICE LIST.—dis. Nomina June 10, 188. Cash prices for Roll and Sheet Brass. For less qu	1.
tity than 100 Bs. add 3C W B.	W
All Nos. not thinner than to No. 28. wider than 2 in. not wider than 1.4 in. All Nos. to No. 28, inclusive, and widths over 14 to	300 UI
All Nos. to No. 26, inclusive, and widths over 30 to	No No
Mc & h advance on each No. above Nos. 26 to 38, in	No
clusive. All Brass thinner than No. 8 is Platers' Brass, at Sheets 24x48, and all sneets cut to particular sizes and lengths under 30 in., in width wider than 2 in. Princers' Rules.	370 450 Co
heets wider than 30 in. and under 40 in. 40 in and over. Circular Sheets, in diam. ft om 4 in. to 14, inclusive 0ver 14 20,	
10 20 30,	190 Ke
LOW BRASS.	GC Tal
4e ♥ % more than High Brass, Gilding Metal, 8c ♥ % more than High Brass. (In Bars	ac Wh
laters' or Gold Metal Sawed	
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advance. letal, in width : in. to 1/4 hinner than No.	40 Led
	# Bog
	# Bog
advance. ctal. in width 1/4 in. to 1/4, inclusive, not thinner tha No. 28, 2c. W B advance. (ctal, in width 1/4 in. to 1/4 thinner than No. 28, 5c.	# Pui Bog Cor Bin Stri
advance. etal. in width 16 in. to 16, inclusive, not thinner tha No. 28, 20. W B advance. letal, in width 16 in. to 16 thinner than No. 28, 5c. B advance. etal, 16 in. in width and less, 1cc. W B advance. ny of the above widths cut to particular lengths, ad 70. W B. GERMAN SILVER MARKET METAL AND WIRE	# Bog Cor Bin Stri
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Mill Unit City New New No. Cott Line Sec. Cold Man Gun Ken Burl Tar : Hem Harr Whil Mixed Solid & Gook Old 2 Pure	tte Shirt Cuttings, Assorted Whites bleached Muslins. Whites, No. 1. Canton Flannels Seconds, light. dark Whites. con Canvas. Day Canvas. No. 1. No. 2. Prs. per 100 lbs. Lilla Rope. Tarred. By Bagging, No. 1.	No. 1. No. 2. No. 1. No. 1. No. 1. Soft. white.	514 @ 514 @ 514 @ 615 114	22 4 4 4 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
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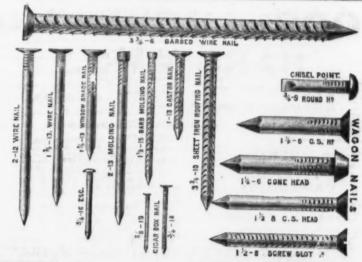
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THE GLOBE MANUFACTURING CO., Successors to THE MIDDLETOWN TOOL CO.

HARDWARE,

"Baldwin" Plane

(Every Iron of our make warranted a parfect cutter.) Also,
Galvanised Hammock or Boat Snaps and Gaff Topsail Self-mousing Ship Hooks, Harness Snaps, Baby Snaps, Washer Cutters, Pocket Wrenches, Amateur Lathes, &c. MIDDLETOWN, CONN.

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MONTPELIER, VT., MANUFACTURERS OF

POUBLE-ACTING SPRING BUTTS,

SABIN'S LEVER DOOR SPRINGS, For heavy doors, BOSS AND CROWN SPRINGS, For light doors, Send for Catalogue. Represented in New York by DAVID HYMNS & CO., 99 Church St.

GUN POWDER.

Laflin & Rand Powder Co. No. 29 Murray Street, New York, infacture and sell the following celebrated b orting Powder known everywhere as

ORANGE LIGHTNING,

ORANGE DUCKING, ORANGE RIFLE

more popular than any Powder now in use.

Blasting Powder and Electrical Blasting Apparatus.

Military Powder on hand and made to order.

SAFETY FUSE, FRICTIONAL & PLATINUM

Pamphlets showing sizes of grain sent free

Patented May 31, 1870.

A fibrous material, encasing about 90 per cent. of its volume of air, and therefore a

NON-CONDUCTOR

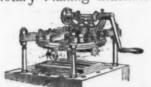
Being made from the slag of blast furnaces it is fire-proof and durable in contact with heated surfaces. Readily applied. Heaviest grade about 25 lbs. per cubic

U.S. MINERAL WOOL CO., DEL.

foot. Price, I cent per lb.

16 Cortlandt St., New York.

Patent Portable Valve Seat Rotary Planing Machine.



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Descriptive Circular on application



An Improved Pattern. Cheap and Durable. BEST IN THE MARKET.

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MACHINERY FOR Straightening and Cutting Wire Of all Sizes to any Length.

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> John Waldron, Sprout's Double and Single Shear Horse Hay Forks And Sprout's HAY ELEVATORS,

GRAPPLES. Send for Circulars. Muncy, Lycoming Co., Pa.

PULLEYS and

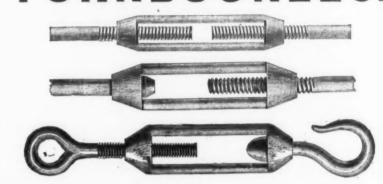
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Repairs for Stoves made at Troy, Albany, Rochester, Cleveland, Buffalo, Roston, St. Louis, Quincy, Chicago, Milwaukee and sisswhere, at W. O. METZNER,

287 W. Randolph St., Chicago, Ill.

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Stebbins and Brightwood COMPRESSION

AND GROUND KEY WORK. Send for circular and price list.

> H. M. BREWSTER, Agent Brightwood P. O., Mass

TREDWELL, COPPINS & CO., 130 Lake St., Chicago, III



Nos. 17 & 19 Green St., Albany, N. Y., Dec. 8, 1880. To All Whom it May Concern: To-day a decree in my suit against G. T. Fisher & Co., of Detroit, for an ringement of my patent, was made and entered, of which the following is an extract

At a session of the Circuit Court of the United States for the Eastern District of Michigan, held at Detroit &c., on Wednesday, the 8th day of December, 1880.

Present, Hon. H. B. Brown, District Judge. NELSON LYON GUYON T. FISHER, et al.

GUYON T. FISHER, et al.)

It is ordered, adjudged and decreed, that the act entitled "An act for the relief of Nelson Lyon and Jero minds is James," passed by Congress and approved April 1, 1825, &c., is a good, valid and constitutional act.

That the original patent, bearing date July 9, 1876, and numbered 128,843, grapted and issued to Joseph Barsaloux, Jeromind 8. James and Nelson Lyon, when corrected by the Acting Commissioner of Patents, as directed by said act, was a good and valid patent.

That the said Joseph Barsaloux was the eriginal apd first inventor of the improvements in metallic stiffeners for boot and shoe heels mentioned and described in said letters patent.

That the Reissued Letters Patent No. 2026 there May 11. 1826, grained to said Nelson Lyon for an improvement in metallic heel stiffeners for boots 4ft shoes, originally patented as aforesaid, is a good and valid patent; that said Lyon is exclusively possessed of said Letters Fatent and the invention thereby secured.

That the defendants, G. T. Fisher & Co., and each of them, have infringed upon the said patents and upon the said Lyon receive of said defendants all the profits &c., they have made, and in addition thereto all the damage he has suffered by reason of the infringements by the defendants, and also the costs, charges and disbursements in the action.

It is also further ordered, adjudged and decreed, that a perpetual injunction be issued against said defendants, according to the prayer of the said compisinant's bill.

All questions as to damages and settlements in relation to infringements under my patents must be addressed to and made with my attorney, WILLIAM H. KING, in my care at the above address.

NELSON LYON.



Wilson Bohannan, Manufacturer of Patent BRASS PAD LOCKS

For Railroad Switches, Freight Cars, and the Hard ware Trade. All sizes, with Brain and Steel Keys with and without chains Patent Horizontal Rim Cylinder Night Latch.

self-adjusting to doors of any thickness, with Patent Stop and Drawer Back Kn RIGHT OR LEFT HAND.



PASSENGER CAR LOCKS, Bronzed, Nickel-Flated and Japan EF Catalogues and Samples sent upon application. BROOK LYN, 1 BROOK LYN. N

New York Wholesale Prices, August 31, 1881.

HARDWARE.	Wro
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Rroad	10 \$ No. 4 ("Snoo Fly") Screen door size \(\psi \) dos \(\size \) 10 \$ No. 5, Screen Door Size\(\psi \) dos \(\size \) 2200 din \(\size \) No. 6, Medium\(\psi \) dos \(\size \) 275 30\(\size \)
Locus Joint, Broad dis soc. Fabile Putts, Back Flaps, &c. dis soc. Luside filind, Resultsr. dis soc. Light dis soc. Locus Pin. Wr. dis soc.	10 % Sabin's Lever . No. 1, \$1; 2, \$1.40; 3, \$2; 4, \$2.50; dis 30 % Sabin's Boss No. 1, \$4.40; 2, \$4.20; 3, \$3.00.dis 10 % Sabin's Crown, \$4.00 \$2,75, dis 50 % Sabin's Crown, \$4.00 \$2,75, d
Spring Hinges American Spiral Spring Butt Co. Jap'd. dis Gem Spiral Spring Butts, Japanned. dis Gem Spiral Spring Butts, Japanned. dis Geer's Spring and Blank Butts. dis Sabin Mig. Co.'s Double Acting dis Subin Mig. Co.'s Double Acting dis Union Spiral Spring, Japanned. dis Union Spiral Spring, Japanned. dis Union Spiral Hinge Co.'s. dis Union Spring Hinge Co.'s. dis Union Mig. Co. dis Union Mig. Co. dis Union Mig. Co. dis Bommer's. dis Buckman's. dis Buckman's. dis Buckman's. dis Beymour. dis 708 Shepand s "Double Locking" Nos. 18 2. dis Shepand s "Double Locking" Nos. 18 2. dis Oc. Co. dis Shepand s "Double Locking" Nos. 18 2. dis Oc. Co. dis Co. Co. Co. dis Co. Co. Co. dis Co. Co. Co. Co. dis Co. Co. Co. Co. dis Co. Co. Co. Co. Co. Cis Co. Co. Co. Co. Co. Cis Co. Co. Co. Cis Co. Co. Co. Co. Cis Co. Co. Co. C	75. **Rarker's Concealed
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Bommer's	Witherby Tool Co
" Seymour	
60 & 6c	2 \$ ' Hotchkiss
Clark's, Nos. 1, 3, 4 and 12dis 70% Bargent's No. 1, 3	Breast, Wilson's Glasc's
How Plus. Sotchkins'	"Weston's
Butchers' Cleavers.	Adjust cach from diam's
Beatty's dla 2 5 7 8 \$10.50 19.00 21.00 24.00 27.00 30.00 33.00 36.00	Danbury
Can Openers. Comet # dos \$2.00. dis 20	\$ Standard
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Bprague	Emery and Emery Paper. Regular numbers. P b 60 Flour and F F. ds. & A. Emery Paper. S. & A. Emery Paper. Sibley's Emery and Crocus Cloth.
U. M. C., F. C. trimmed	8ibley's Emery and Crocus Cloth
"Double W. proof,	\$ Kettles
Caps l'ercussion, v 1000. U. M. C., F. C. trimmed	Secutcheons.
Cartridges.—Rimdis 60&10&10 Central Fire	
Central Fire	Fenn's Pat. Rubber Ball. dis 40 \$ Sobren's Pat. Rubber Ball. dis 25 \$
Carpet Stretchers. # dos \$5.00, dis 30 Cast Steel, Polished. # dos \$5.00, dis 30 Iron Steel Points. # dos \$2.00, dis 45 Bullard's. dis 25	Star. dis 55&20 % Frary's Patent Petroleum. dis 20&10 % Wood and Metallic. dis 40 %
Casters. Bed	Wood dis 25 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
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('Bain. Trace, 6\(\delta\)-2	Files. \$4.00 to £, dis 35 5
Chairs (thans. Trace, 04-17-2	Waiter Spencer & Co. Diamona 4.00 to E
Oneida Halter Chain (old list)	Nicholson
Chnik.	#inting Machines. Enox, 4-inch Rolls
Unincis.	" 5 " " 4.75 each net
Socket Framing, Crossman	Eagle, 314-inch Roll. \$2.15, dis 20 5 " 46 " \$2.35, dis 20 5 Eureka, No. 1, 7-inch Roll
Buck Bros. new list. dis 2)4 1 1 1 1 1 1 1 1 1	Crown 416 in. \$3.60 t-in. \$4.00 t-in. \$6.50 each dis 20 \$ Star
Morrill	Bomestic Fluter. I. w each net Geneva Hand Fluter. White Metal. W dos \$12, dis 25 % Crown Hand Fluter, Nos. 1, \$14.00; 2, \$12.40; 3, \$10.00
Corner	Shepard Hand Fluter
Clamps. (ron, Providence Tool Co.'s, Wrt. Irondis 25, 5	Combined Fluter and Sad Iron & dos 15.00, die 30 % Buffalo & dos 10.00, dis 10 % Fluting Sciences dis 45 % P.
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00 k	Grindstone Fixtures. Sargent's raten. dis 70&10%10%10% Reading Hardware Co., new list,
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No. 5, Screen Door Size	×
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Bercules	W. W.
Drawing Mulves.	25.00
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Dambury	1
Page Heaters. W dos. \$2.50 dis 2.50	1
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Mill E. Buckets, heavy, 5 to inches (Duc's Improved) ** dos \$5.50@ \$10.20 dis. 10 \$ **Btorehouse. Duc's Pat.) 12 to 17, \$12.00 @ \$20.00.dis. 10 \$	c
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< g § g let	Providence Tool Co. : Hand Cuffs, \$15.00 \(\psi\$ dos \) " Leg Irons, \$25 \(\psi\$ dos \) Tower's dis	De Beque. dis rocto se Police. Small, \$5.25; Med. \$7.50; Large, \$12.00, dis 10 \$7.00; Convex Reflector. \$2.75 \$\times\$ dos, dis 10 \$\times\$ Lawn Mowers. Pensylvania, Philadelphia and Excelsior, new list. dis 30 \$\times\$
108	Tower'sdis HandlesDoor or Thumb Latches Noso. o. 1 2 3 4 4 Per dos\$0.80 1.00 1.18 135 1.50dis 60x Roggin's Latches	list
2 %	Per dos\$0.86 1.00 1.18 1 35 1.50 dis 60st Roggin's Latches	Compared Compared
0 % 0 %	Bronzed Iron Drop Latches % doz \$0.75 @ 0.85 dis Jap'd Store Door Handles—Nuts. \$1.62; Plate \$1.08	io % Eureka, Tinned
2	Barn Door	10 % Sammis'
39 te	Surface Chest	10 % Cotton Chalk
%	Saw and Plane dis 1002 Boynton's Pat. Loop Saw Handles dis	87.50 dis 25 g Mason's Linen. dis 25 & 10 g Mayon's Linen. dis 25 & 10 g
K	" Centennial Saw Handlesdis:	Locks and Latches.
	Hickory Firmer Chisel, assorted, # gross \$4.50	Locks and Latches. Cabinet - Eagle
×	Apple " assorted, " 5.00 di	P. & F. Corbin dis 60 % A. E. Dettz dis 3.040
X X	"Framing assorted, 5.00 GFile, assorted, gross	Langstroth & Crane's List Jan. 1 '77.
MAMMAMA	Auger, assorted, # gross 0.00	Flat Key
N N	Douglass'# set \$1.25, 1	dis 3c@fc % et Yale Lock Co., Flat Rey
2	Hangers. Barn Door, old patterns	"Fester" or "American '
REN	### Hangers. dis 6ct.	NAME OF TAXABLE AND
2 2	Climax (Ahti-Friction)	S Branford Norwalk
MMM	Kidder's	F. & F. Corbin List of June 10, with changes kusseli & Erwin (of Dec. 1, 1880, and April
*	The "Boss"dis. octro	
8	Harness Snaps	Padiocks—Russell & Erwin
8	Fit-h's (Bristol) " " 14.00, dis 55 @ 60	Wm. Wilcox & Co \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
2	Andrews	Conestoga
2	Covert dis 4: Covered Spring dis 4: & co	A. E. Diets
5	Hatchets.	MalletsHickorydis 10%10 %
2	Isaiah Blood	Penfield Block Co., Lig., Apple & Hickorydis 30 %
	Hunt's. Nos. 1 2 3 P dos 7.50 8.00 8.50 Hunt's dis 20210	S Dixon's (P. S. & W.) Nos. 1 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
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	Lathing, Nos. 1 2 3 dos 8.00 9.50 10.00 Yerkes & Plumb	Hales'Nos. 11 12 13 13
1	Shingling, Nos. 1 2 3 # doz \$7.57 \$8.00 \$8.50 Claw. Nos. 1 2 3 # doz \$2.52 \$8.75 \$2.25	Draw CutNos 5 2 6 8 1 1 5 5 6 8 1 1 5 6 8 1 5 6 8 1 5 6 8 1 1 5
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	Lathing Nos. # dos 7, co 8, co 8, co 8, co 8, co 8, co 9, co 8, co 9, co 8, co 9, co 8, co 9, co	Penfeld Block Co., Lig., Apple & Hickory
10	Nos. 56 7 8 W dog 16.00 18.00 20.00 22.00	Silver & Deming
1	Shingling, Nos. 1 2 3	9 dos
1	Lathing, Nos. 1 2 5	Minchag Kniverprise hig. Co)
V	Flay % nives. "Lightning"# dos \$20,00 ne Vadaworta s	t 3 biades, \$18
g	Hinges. ate, Western # dos \$6.25, dis 65&10	Smith'sper dox, Single, \$1.35; Double, \$1.80; dis 10 %
1	** N. E	Steppins Pattern
1	" N. Y. State 1 dos \$0.50. dis 50&10 }	Chase's Hard Metaldis tokio %
	Common Sense	Lincolu's Pattern
R	olled Blate	Boss, No. 1 2 3 4 4 87.00 88.00 80.00 per dom.
R	olled Raised	Bronse "dis 50&10
8	Providence" over 12 in. \$5.00 \$ 100 \$ 6	Nuts and Washers.—(In lots less than 10c lbs
H	eavy Welded Hook 8 to 12 in., \$6,60 % 100 % dis 10 %	Smith's Der oos, single, \$1.5c; Double, \$1.5c; dis 10 & Cowles Hdw. Co.
80	erew Hook and Eye	Nut Crackers Table (Humason & Beckley Mfg. Co.)
W	Vadaworth	Nut Crackers Table (Humason & Beckley Mfg. Co.)dis 33½ % Rlake's Fattern & dos \$2.50, dis 10 % Turner & Seymour Mfg. Co dis 55
80	Fougar Stray and 1 into Jec. 20. 77 int Control 10 into Jec. 20. 77 int Control 20 into Jec. 20. 77 into Jec. 20. 78 into Jec	Oakum. U. B. Navy. Navy. W b ros havy. W b los
P	lanters'	Navy
Be	ovili Pattern, Handleddis 24 % ick's Pat. Solid C. S. Planters' dis 20&10 @ 30 %	Brass and Copper
w	Insted & Lane, Planters	Prior's Patent or "Paragon Zinc
M	ngic	National Page Pag
Bi	rd Cage, Sargent's listdis 60&10 %	Ox Bails
Co	ottom, Patented (N. Y. Mallet & Handle Wks), dis 3c5 tton (Humason & Beckley Mfg. Co.)	Pencils. Fabor's Carpenters'High list, dis 40% to 5 Round Gilt #gross 8-27 nes Dixon's Lead#gross 4-50 nes Lumber #gross Dixon's Carpenters'dis 40 & ro 5
Be	nch—Hotchkins' \$5 00 \$ dosdis 60&10 %	Dixon's Lead
Cl	Medil's, 85.00 % dos	Dizon's Carpenters' dis 40 & ro %
Ce	"Reading list	Packing, Steam. N. Y. Beiting and Facking Codis 20 Picture Nails.
Co	at and Hat, Sargent's list	#Inclure Nalls. Brass Head, Sargent's List
Pie	eture Hooks, Brown's Pat. Solid Brass, & per gross	Porcelain Head, Sargent's Ci t
W	seel (T. & S. MIG. Co.)	Niles Patent. dia 25 % Picks and Mattocks. dia 35
W!	Second S	Pinking Irons
Ho	oks and Eyes-Malleable Irondis 65&10 %	Magic # doz \$10.00, net
1	# Brass	Maglo Machine # doz \$10.00, net Astor Plaiting Machine
Cli	sable, # 3310 280 260 250 240 230dis 30 % ntou, " 230 210 200 190 180dis 30 %	Planes and Plane Irons.
Pu	tional, "350 280 260 250 240 290dis 1082.0 %	Moulding
Vu	and the war	The Stanlev (S. R. & L. Co.) "dia 20&10 5 Balley's "Victor"
P	orward " also aco ano ano are ano dia to d	Lafin Mfg. Co
R	Terse Nhoes.	Buck Bros
Mu	le Shoes. Wkeg 5.37%	Iron "
Te	e Awis, Chiseis, &.	** Sandusky Tool Codis 20
Nai	American ice Consei	Rutton's Patent dis 331/4 % Hall's Pat. Compound Lever Cutting Nippers No. 2;
Wh	uite's Sliding Head Picks \$\psi \text{dog \$2.5c dis 40 \$5} \\ niap's Kirg Picks \$\psi \text{dog \$3.00. \(\frac{1}{2}\) is 40 \(\frac{1}{2}\).	d B. \$20; No. 4, 7 lb., \$30 \$ dozdis 45 \$ Humason & Beckley Mfg. Codis 33)4 \$
Iro	n Head Picks, Sargent's doz 51.60. d1840&10 %	Eureka Pliers and Nippersdis 25 % Russell's Parulleldis 25 %
ice	naing's Finished Steel	Pilers and Nippers dis 334 5
Cor	chen Ice Todgs & doz 2.25 net nbination Ice Tools dos 8200 net	Plumbs and Levels. Oliston's
K	etties. Brass, 7 to 13 inches inclusive	"Non-Adjustable dis 34210 % Chapin's Patent Adjustable dis 34210 %
Ens	meteddis 45 S	Plumba and Leveis. Disaton's. Staniey R. & L. Co. 's Pat. Adjustable
Am	Bread Bread Water & St. S. de 1. S	Johnson's Patent Adjustable dis 04210 % Pocket Levels. dis 04210 %
Hay	and Straw—, Wadswortn's "dis 331/4 %	Davis' Inclinometers
L_{BD}	te and Pocketoce Custery	Vanchan's Post Hole.
Bas	nebadis 50 &10% e-Commondis 30&10% nacite Loor KbobsNew list, dis 35&5 \$	6 in. \$23.60; 7, 8 and 9 in. \$25 per dosdis 20% fo 4 Eureka Diggers * dos. \$40.00
000	r, Mineral Por Jap'd Samo discounts as D	Leed's each \$2.50net Pruning Hooks and Sacars. Diston's Combined Pruning Hook and Saw
64		Pruning Hook " 1250 die 20 %
Plot	niture, Plain	* Pruning Hook. per dos \$19.00, dis 20 % E. S. Lee & Co. 's Pruner dis 50 % Fruning Shears dos \$5.50@\$0.00
Ien	Sargent'sdis 60&10 €	Fulleys. dis 6-2:10 % House and Tackie
nu!	tter, Porcelais	
LI.	Melting—Sargent's	Japed Bide
L	" P. S. & W. dis 30&10 %	
ub	With Guards 350 extra. } net	Shade Rack
	City	Remis & Call Co is Cast Steel Drive die softs &
lur	City	" Springfield Socket dis toks s
lete lur eos lrac Exe	City No. 1, per dos., \$10; No. 2, \$5, det cor. No. 1, \$87 dos., \$5, \$0; No. 2, \$85, 0 tet ricane No. 2 Process Process Process Process Process Process No. 5, \$\$\pi\$ dos \$1.75, dis notice \$1\$'s Patent dis notice \$\$\pi\$ dis notice \$\$\pi\$ dis notice \$\$\pi\$.	Punches. Punches. W dos \$2.00: 2.45; 2.40, dis \$0.5 Semis & Call Co.'s Cast Steel Drive. Springfield Softest. dis 402.5 Spring. W dos \$900.0 dis 405.6 Spring. Leach's Fatont. dis 405.6 Bemis & Call Co.'s Suring and Chack. dis 40.5 dis 40.5 dis 40.5
leta lur esi lirac Etn	### No. c, \$8.65; No. 1, \$10.15	Springfield Softest
iur ees krac Etn	CRITY NO. 1, per dos., \$9.5; No. 2, \$9, ustron. Or. No. 1, per dos., \$9.5; No. 2, \$8.5, nstricas No. 2, 8.5, nstricas No. 2, 8.5, nstricas No. 2, 8.5, nstricas No. 2, \$\pi\$ dos \$8.75 nstricas No. 2, \$\pi\$ dos \$8.75, das notato \$ 1.5 nstricas No. 2, \$\pi\$ dos \$8.55 nstricas No. 2, \$\pi	Spring Boringfield Scottes. dis tent to the spring and Check. dis to the spring and Check.

September 1, 1881.	1
Rall.	Shevels and Spades. dis r; \$ dis n;
Barn DoorInch	78 Griffiths dissociet 78 Old Colony diss. dissociet Payne Pettebone & Son, new list, dissociet dissociet
Barn Door Inch	Remington's (Lowman's Patent)
J. R. Torrey Razor Codls 19	Shevels and Tenga. Iron and Brass Head, R. & E. list
Hazer Strass. dis 57 Genuine Emerson. dis 57 Badger's Emerson. dis 42 Badger's (not Emerson). dis 30	Less than a case
Badger's (not Emerson)	Profite Manyes. Defiance Metallic dissection Iron. dis 45 %
Evans dis & Constitution Emerson with a des & Constitution Emerson with a constitution Emerson dis constitution emerson dis constitution emerson dis constitution emerson dis constitution emission disconstitution emission disconstitution emission	Defiance Metallic dis socio s Iron dis 4 s Wood dis 90kio 8 Hallev's (Stanlev R & L. Co.) new list dis 90kio 8 Stearn's dis 90kio 8 Stearn's dis 90kio 8 Stearn's dis 90kio 8 Stearn's doz 8000 dis 40ks 8 Stearn's doz 8000 dis 1 s Stearn's doz 8000 dis 1 s Stearn's doz 8000 dis 1 s Stearn's Stearn's doz 8000 dis 1 s Stearn's doz 8000 dis 1 s Stearn's Stearn's doz 8000 dis 1 s Stearn's Stearn's doz 8000 dis 1 s Stearn's Stearn's Stearn's doz 8000 dis 1 s Stearn's Stearn'
TORREY'S	Bonney's # doz \$10.00 dis 40&5 \$
# Elves. dis 61 ron and Tinned. dis 61 ron bulk, list of May 21. dis 45 Copper Rivers and Burs. dis 334 Nos. " 8 9 10 11 12 13 14 14 14 W 10 -400 500 520 540 550 550 500 500 500 700 Burr's. dis 434	Yee'
Nos" 8 9 10 13 13 13 14 15 0 10 m. 490 500 530 540 550 550 600 550 700 Burr's	Basting
Rods.	The Wm. Rogers Mfg. Co. dis 40% for 5
Stair, Black Walnut	Hall & Elton dis 404 % % % Holmes, Booth & Haydens dis 404 % % % % German Sityes
Reflers Farn Door, Sargent's list	Cast Steel, Sii. Plated
Acme (Anti-Friction) dis 40	Tin Cowles Hdw. Co.). dis 10 % case lots dis 25 %
Manite	"Lightning" Screw Plate. dis 5210 %
### Hay Rope.—#mfs' Net List. May 21, 1881, dis on sooc lb and over, 151c ### had over	
Steal	C Slips No 1, W B 20c net No 2. W B 16½c net No 1, W B 40c net
Rules Boxwood. Ivory.	Turkey Oil Stone (Chase)
Rules Boxwood Ivory. Capit's dis 70&10 % dis 60&10 Stantey dis 50.	Lake Superior (Chase)
From 4 to 1c lbs	Stove Pollsh. Joseph Dixon's
Cad irons. From 4 to 1c lbs. \$\pi\$ 35\cdot n\$ \$\pi\$ 40s \$\pi\$ 90 ns \$\pi\$ 40s \$\pi\$ 10s 0s \$\pi\$ 10s 0s 10s 0s \$\pi\$ 10s 10s 0s \$\pi\$ 10s 10s 10s 0s \$\pi\$ 10s 10s 10s 10s \$\pi\$ 10s 10s 10s \$\pi\$ 10s 10s 10s 10s \$\pi\$ 10s 10s 10s 10s \$\pi\$ 10s 10s \$\p	Store Pollsh Framily, Loring's dis 10 \$
Mrs. Pott's Irons, Square Back	K Rubv. # gross \$3.75, net K Ristag Sun. # gross \$5.75, net J Dixon's Plumbage # 8 8c. net
Band Paper- Bander & Adamson's Flint, so to 114\$4.75 \(\pi \) ream \(\)	Steel dis 50 %; full cases, dis 50% 2 %
2, 2\frac{2}{6}\frac{2}{6}\frac{3}{6}\frac{2}{6}2	Steel dis 50 %; full cases, dis 50 %; 2 % from dis 50 %; full cases, dis 50 %; 2 % from dis 50 %; full cases, dis 50 %;
Bartles Flint, same list as B & A	Winterbottom's Try and Mitre dis 20210 5
Band Paper. Bacder & Adamson's Flint, oc to t/6\$4.75 \(\pi\) ream 2, 2/6 \(\pi\), 2.5 \(\pi\) ream Barder & Adamson's Flint, oc to t/6\$4.75 \(\pi\) ream 2, 2/6 \(\pi\), 2.5 \(\pi\) ream Barder & Assorted & 75 \(\pi\) ream Emery. \(\pi\) ream \$6.00 \(\pi\) 11.00 Bartles Flint, same list as B & A. A. (ils. 25 \) New England, same list as B. & A. Flint (ils 25 \) Rew England, same list as B. & A. Flint (ils 26 \) Gage's (ils 20 \) Gage's (ils 20 \)	Tinned Swedes Tacks. dis 45 5 Tinned American dis 45 5 Swedes Tacks all blade dis 55 3
Bask Cerd.	Disson's Try Square and T Heveis
Biliver Lake, Homp. B 50c, dis 10:	Gimp and Lace Tacks. dis 30 % g Finishing Nails. dis 33 % G Trunk and Clear Nails. dis 28 %
Raw Hidedis 25 Steel Ribbondis 10	Common and Patent Brads. dis 25 % Basket Nails Brush Teche dis 25 %
Hash Locks Clark's, No. 1, \$10.00; No. 2, \$2.00 per gross	Leathered Carpet Tacks. dis 20 %
Walker's. dis 20 Hammond's Window Springs. dis 20 Northup Window Springs, No. 1, \$10.00; \$2 gross. dis 10, 20	Chair Nails
The Perioct, Clark & Smith, Plain Jap'd # gro \$10.00 net Por.Knob Jap'd # gro \$10.00 net Nickel-Plated # gro 27,00 net	Double-Pointed Tacks dis 4065, 5 Tas B erer
Universal "	Tapes, dieasuring
and over. Mausage Stuffers or Fillers. H dos \$20 dis 20 d	The state of the s
Perry	Tobacce Cutters. Enterprise Miz. Co. (Champion)
Disston's Circular dis 40 %	Toe Calks.—Winsted Doc. dis 5
Beynton's Lightning. Cross Cuts, new listdis 20 % One-Man, all lengths,	Machines (P. F. & W.)
" Lightning Buck Saws X Pardis 25 % Lightning Hand, Panel and Ripdis 25 % Wheeler & Ciemson Mig. Co." Handdis 20 %	Wollensak's Patent
Circular dis 49 5	Excessor
Nos 101 102 103 104 105 per dos\$10.00 8.50 10.00 7.50 6.25 net	"Blake's Patentdis 40 S Mouse, Weod. Choxer
Maw Frames. White, Vermont	Catch-em-alive
per dos. 510.000 per dos \$3.40 and \$4.40 dis 10 \$811iman's Genuine	Lothrone Brick and Plastering
Leach	Rode's Brick
Hammor. Hemis & Cali Co,'s New Patdis 40&c \$ Bemis & Cali Co.'s Lever & Bpring nammer.dis 30&c \$ Bemis & Call Co.'s Lever & Bpring nammer.dis 30&c \$	Triers. Butter and Choesedis 203
Baw Sets.	Vises. Solid Box
Hart's Patent Lever	" Peter Wrights
Mcales. Batch, Counter, No. 171 \$\pi\$ dos \$36. dis 36&10 \$	** Wilson's
Union Platform	Bargent's dis tode to s Trenton dis 30 5 Backus and Union dis 30 5
Howe's dissort	Oval Slide
Family Universal dis 50 5	"Family." List
Scales	Stearn's
Borabers. Adjustable Hox Scraper (S. R. & L. Co.), \$6.50.dis 20&10 \$ Box, I Handle	Butter and Cheese
Herabers	Washer Cutters.
Manager Drivers.	Washers.—See Nuts and Washers.
Douglass Mfg. Codis zo&ro&ro \$ Disston'sdis 40 \$	Wire-
Disston's Patent Excelsion	Bright and Annealed
Bargent & Co.'4 Hisck Handlesdis 40&10 % Gay's Double Action Ratchet	Coppered
Douglass Mfg. Co. dis zokrokro & Dission's. dis zokrokro & Dission's. dis zokrokro & dis zokrokro & dis zokrokro dis zokrokro dis zokrokrokrokrokrokrokrokrokrokrokrokrokro	Wire- Brass and Copper. List of June 10, 1880
	Tinne Nos. e to 18 Cast Steel
	Nos. to and fin
Round Head Brass dis 20 % dis 20 % brass and Silver Capped dis 40 % dis 40 %	Fence Staples.
Coach Patert Gimlet Point, List per 100. dis 60 %	Japanned Bard Fence. # b gc galvanised b b 100 Steel Music Wire, Nos. 12 to 27
Machine, Flat Head, Iron. disc; 3 Round Head, Iron. disc; 3 Rench, Iron. disc; 5	Turner & Seymour Mfg. Co., Picture Wiredis 80x20 % Judd's Picture Wire
Fig. 11 From New list April 27, 1881 dis 40 5	Wrenches.
Hand Rail, Sargent's dis 2421 s Hand Rail, Sargent's dis 554,210 s " Humason, Beckley & Co s dis 55 " Am. Screw Co., list of Jan. 1, '81.dis 50&10 s	American Adjustable
Screw Window Balances.	"Mechanics" dis solt 10 % Pattern, Malicable dis 75 % Wrought dis 65 %
R. B. Hugunin's	Girard Standard
Screll Saws. Lester, \$10,00	Baxter's Adjustable - S,
Shears and Scissors. American (Cast Iron	van Wagoner & Williams' Basin
Barnard's Lamp Trimmers # dox \$3.75 Tinners dis 15 5 Seymour's, List, Nov. 25, 1979 dis 60&10 2	Webster's Pat. Combination. dis 25 Wringers. Per don Universal, XX No. 24. 86-501
American (Cast) Iron	NO. 15
Bheaves. M. W. & Co., list dis 452 % stiding Door, D. & F. list	NO. 8. (SCD), 1: 00 (SCD), 1: 0
Sheaves. Biding Door, M. W. & Co., list. dis 45&2 % Riding Door, M. W. & Co., list. dis 0o&10&2 % "Patent Roller dis dis 0o&10&2 % "Russell's Anti-Friction dis 0o&10&8 % "Roore's Anti-Friction dis 0o&10&8 % Hiddag Shutter, & & K. list. dis 0o&10&2 % Barrent's list. dis 0o&10&2 %	Pearless, No. o, no Cogs
Moore's Anti-Friction 418 45 % Hiding Shutter. R. & E. list dis 60&10&2 % Sargent's list	10 NO 20 10 0083
Sarpent's list	Wringers. Universal, XX No. 2½



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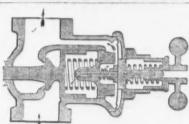
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Double Bit Axesnet 19.00	T
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Watrous' Ship Augers	
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Lanterns. \$400, \$9.00 net Nail City. \$400 net Square Candle and Oll. \$400 dos Tubular. No. 0, \$8.65; No. 1, \$10.15 \$4 dos net Globes, 55 conts extra per dos. net.	55555
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Enterprise Stuffers	A
Scioto	NE
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Stanley's Adjustable	2222
Balley	2
Rules.—Stanley Boxwood	2
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% 00	3\\\ \column{a} \colum	1
% 00	% and % by % and 5-16	100
Bun	1½ to 6 by Nos. 17 and 12. 3 10 1 to 1½ by ½ to 3-16. 3.10 1 to 1½ by Nos. 17 and 12. 3.20 74 and 13-10 by ½ to 3-16. 3.40	1
N NB	1 to 1% by Nos. 11 and 12. 3.50 74 and 13-16 by 8 to 3-16	1
* *		1
A A	134 to 4, Nos. 13, 14 and 15. 3.30 154 to 3, Nos. 16, 17 and 18. 3.40 154 to 2, No. 19. 3.50 154 to 2, No. 20. 3.50 154 to 2, No. 20. 3.50	1
٤.	154 to 2, No. 22	1
1 × 1	15-16, 1, and 1½, No. 21. 3-50 15-16, 1, and 1½, No. 22. 3-90 ½, Nos. 13, 14 and 15. 3-70 24. Nos. 10, 17 and 18. 3-70	1
10	15-16, 1, and 1½, Nos. 16, 17 and 18,	1
7 12 6	13-10, No6. 10, 17 and 18. 4.00 13-16, No6. 10 and 20. 4.10 13-16, No 21 4.20 13-16, No. 22 4.30	1
% & h	13-10, NOB. 19 and 20. 4-10 13-10, NO 21 4-20 13-10, NO. 22 4-20 13-10, NO. 22 4-20 14, NOB. 13, 14 and 15 4-20 14, NOB. 16, 17 and 18 4-10 14, NOB. 19 and 20. 4-20 16, NOB. 11 4-20	1
h× ×	4.80 4.80	-
%	11-16, No. 22	1
ot ot	56, No. 21	1
31	0-10, NOS. 10, 17 and 18	1
RH X	48 inch, Nos. 13, 14 and 15. 4860 36 Nos. 16, 17 and 18. 490	1
**	No. 21	1
***	Ties. 1-10c per lb. extra will be charged for each gauge lighter than the lightest indicated. 1-10c per lb. extra will be charged for cutting floops	
XXXX	to specified lengths. Barrel Hoops. 1/4 to 2 in., cut to length. o to 11 lbs, per set of 6 hoops. 8 lbs. and less than 9 lbs. per set of 6 hoops. 5 cc. Less than lbs. per set of 6 hoops. 3 cc.	-
***	All Iron including Tire	
PARRI	No. 9 and heavier	
M 5 M	Sheet Iron. Common. Charcoal. Juniata. No. 10 to 14	
MNNNA	No. 18 to 17. 3.8c 5.1c 6.6c No. 18 to 17. 3.8c 5.1c 6.6c No. 18 to 21. 4.1c 5.6. 7.1c No. 22 to 24. 4.30 6.8c 7.3c No. 23 to 24. 4.40 6.0c 7.5c No. 27. 4.70 6.2c 7.70 No. 28. 5.5c 7.5c 8.1c 7.5c 8.1c 8.1c 8.1c 8.1c 8.1c 8.1c 8.1c 8.1	-
8 . 80	No. 27. 470 6.20 7.50 No. 28. 470 6.20 7.50 No. 28. 470 6.20 7.50 All sheets No. 18 and lighter, over 30 inches wide, not less than 2.100 extra. Wood's Patent Pianished Sheet.	
500	ist quality (A)10\(\)c\(\)c\(\) 2d quality (B)\\\)\(\)c\(\)Calvanized C. H. B.—(Charcoal Hammered Blooms.)\(\) \(\)Nos. 14 to 20	
HHH H	Nos. 25 and 26	
at	2½, 3, 3½ and 4 inch	-
此名名居居	All sheets No. 18 and lighter, over 30 inches wide, not less than 2.10c extra. Wood's Fatent Pianished Sheet. 1st quality (A) 10\(\frac{1}{2}\) (c) d quality (B) 0\(\frac{1}{2}\) (c) Galvanised C. H. B.—(Charcoal Hammered Blooms.) Nos. 14 to 20 12c No. 27 15c No. 21 to 24 15c No. 26 15c No. 20 15c No. 20.	
MMM	8 lbs. to the yard2.ec 20 lbs. to the yard2.sc 22 lbs. to the yard2.sc 25 lbs. to	1
M MM	13\(6 \) b \(9 \) \(\frac{4}{3} \) \(7 \) \(8 \) \(16 \) \(15 \) \(1	1
SECRET SERVE	### Flat Rails.—Punched and Countersunk. 14 to 2 by 1/4 to 8/4 inch	-
10	14 09 %, 7-10 and % inch	1
50 86 86	To age to a series of the seri	

[HE IRON AGE	C
-	Nails. See Pittsburgh Trade Report.	
	Best Quality Refined Cast Steel. Square, Flat, Octagon and Round.	
	78 to 2 inches, inclusive	
	% to 2 inches, inclusive. IIC 516 and 2½ to 3 inches, inclusive. IIC 516 and 2½ to 3 inches. I2C ¼ and 3½ to 4 " 3c 7-32 and 4½ to 5 " 44° 37.6 and 5½ to 6 " 7.72 and 6½ to 6 " 7.72 an	
	% inch	
	less than above prices Machinery Steel.	
	Crucible. Open Hearth	
	Round	
	Ordinary Sizes, % to 2 inch Round 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	1
	Square, Flat and Octagon, 1/2c extra throughout the list. Cut to specified lengths, 1/2c extra.	
	Hammer Cast Steel.	
	Above 2 inches	i
	Bessemer &	
	To n'gauge 110 90 7/50 6c 10. extra for each additional gauge. Cut to multiples or specified longths, \(\frac{1}{2} \) c. extra.	
	Miscellaneous Cast Steel. Auger and Auger Bit. Axie Steel for carriages and was a constant.	
	Auger and Auger Bit. 7e Axie Steel for carriages and wagons 7e Frog Points and Plates 8ise Vide Bars 96c	
	Skate Steel	ı
	Coal and Granite Wedge	
	Roller	
1 1 1	Roller - 7560 Roller - 7560 Spindle, subject to Machinery classification 7c Trap Spring Steel 8c Forged Crank Pins and Lathe Spindles 9c Piston Rods, plain 6560 Silde Bars, Forged to shapes 9c Silde Bars, plain 6500	
4	torged to snapes.	
	Bollor Wro Pow and Flue Chart or Bessemer.	
	thick. Boiler, Fire-Box and Flue Sneets, not less than 3-16 Solur, Fire-Box and Flue Sneets, not less than 1/4 Circulars and semi-circulars, when ordered separ- ately.	
000	ately Smoke Stack, to shape Scomotive Tank Steel 70	
000	File Cast Steel. 70	
8	Square, Round, Half Round and Flat Bastard, 6- Inch and over	
000		
20 20	Spiral and Taper, cut to lengths	1
25.05		1
2	1x\(\) and over 7\(\) c 1x\(\) 1x\(\) 16 and \(\) 8c 1 and 1g-16x\(\) and 5-2, 5\(\) 2x-16 and 5-3; 8c 4 and 5\(\) 4x\(\) and 3-32 and 12 g 9c Solid Safe Cast Steel 9c	
3		١.
0.0	Agricultural Implement Cast Steel. Fork and Rake, Crucible	
00	Crucible Plow Steel in slabs	
00	Spring	!
000	Toe Calk 4560 Plow 4560	1
0	Sleigh Shoe	l
000	Grain Drill Bars	
000	Toe Caik	
000	Rolled Hammer Billets Where Bessemer or Open-hearth Steel can be used in place of Crucible, the difference transfer as	1
000	Rolled Hammer Billets	
00		
000	Furnace, Floor and Straightening Plates	
0000	Spindles and coupling boxes 35 cc Sand Rolls and Pinions, large size 3 cc 3 cc 4 cc 4 cc 4 cc 4 cc 4 cc 4 c	
0	Pipe Mill Castings 3360 Rolling Mill Castings under 50 lbs 50 Spur and Bevei Wheels Leave 40	
0 0 0	Pulleys up to 30 inches. 3340 Pulleys up to 30 inches. 440 450	
000	Housings and Castings not otherwise specified 3 c	1
000	Chilled Rolls.	1
000	6 to 7 In. diam., 7 to 20 In. long	1
000	White and Red Lead. Strictly Pure White Lead in Oil. in kegs. 7c.: in 25	
000	Strictly Pure White Lead in Oil, in kegs, 7c.; in as b Tin Pails, 4c. \$\psi\$ nover keg price; 1246 b Tin Pails, 4c. \$\psi\$ nover keg price; 1246 b Tin Pails, 1c. \$\psi\$ nover keg price; assorted, 1 to 5 b cans, 9c. per b over keg price; assorted, 1 to 5 b cans, 9ry White Lead.	
000	Red Lead, very brilliant, in kegs, 7c; in barrels, 6%c	1
000	Freights equalized with all points. Terms: Note at sixty days, or if paid within 15 days from date of invoice, a discount of 254 per cent. will be allowed, but not otherwise.	
C	be allowed, but not otherwise. Window Glass.	1
000	Per Box of 40 Feet.—Discount box to % on single strength, box to m double.	1
000	Single Strength.	1
0000	Size. AA. A. B. C.	
ccc		
c	20 X 20 10 24 X 30 13.00 11.50 9.75 9.00	
6	30 X 52 to 30 X 54	1
	34 X 58 to 34 X 60	
eee	DOUBLE SEFERIGE. 6 X 8 to 10 X 15.	
c	15 X 36 to 24 X 30. 10,74 17.25 14.50 26 X 28 to 24 X 36. 21.00 18.5c 15.75 26 X 36 to 26 X 44. 23.25 21.25 17.25 26 X 46 to 30 X 50. 24.00 22.40 18.00	
	26 X 46 to 30 X 50	1



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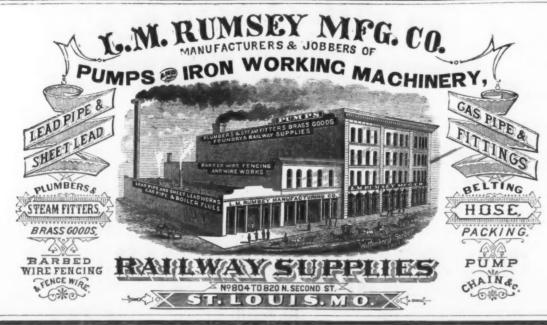
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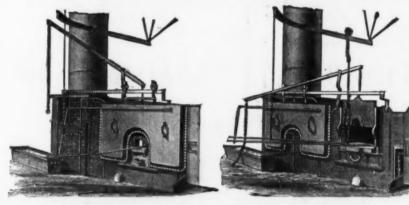
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ı	BellsConnel's Crank Gong reduced listdis 20%10 %
ı	Bird Cagen. Japanned M. B. & D., reduced list, 1879dis 40 % Brass 1879dis 33/5 %
	Blind Fasts.

	" 31 OF 34 IB., NO. C W GOS 1.2	
	Axle Clipsdis 50	2
	Balances.—Chatilion'sdis 15&10	
	Balances.—Charmon'sdis 1520	6
•	Barn Door Rail,	
189	Barn Deer Rail, Cast Angle (for Anti-Friction Hangers)per ft. 26 " Half-Roundper ft, 36, 30; 36, 40; 36, 59 Wrought "per ft, 36, 30; 36, 40; 36, 59	e
	" Half-Round per ft, \$6, 30, 76, 40	3
	Wrought " per ft, 14, ac: 54, 4c: 34, 54	0
	Bells,-Connel's Crank Gong reduced listdis 20&10 5	
	Brad Cages, Japanned M. B. & D., reduced list, 1879dis 40 Brads	
	Japanned M. B. & D., reduced list, 1879dis 40 9	į.
	Brass " 1879dis 3356 5	6
_	No 6 Fasts @ C sets 6 c	0
,	Vegrie Fosts B C acts 6 c	
	Shedd's 9 Custs 70	
	bullette billion in the control of the party	
	Blind HingesMall. Hook, 3 holes & C sets 8.50	D.
	Brad Awi Handles.—	
		2
	Phonix Adjustable	
S	Bolts, -Norway fron Carriage dis 70%10 9	Н
	Common Bodes 5	М
	BoraxRenned 140	3
_	Boring Machines.	
_	Eagle Upright each,	εl
	Eagle Angle each, 0.74 list	١,
	Snell Augers# set 2.43	и
	Braces.—Barber'sdis 40ft 5 1	П
	Sportord's dis so & 5 %	н
	Braces.—Baroer s. dls oc 5, 5 Spofford's. dls to & 5, 6 Bactus' dls to & 6, 6 Bracace Saws.—Holly Scroll Saw. each, 8, c Demas Lathe and Scroll Saw. 5, 6 Bracket Saws, extra quality, to No. 5, # gro & 6, 6 Steel Frame, with patterns. # doz 6, 6 Lester	П
	Bracket Saws Holly Scroll Saweach, 82.50	ч
_	Demas Lathe and Scroll Saw " 6.50	
	Bracket Saws, extra quality, to No. 5 gro \$0.75	П
	Steel Frame, with patterns @ doz 6.50	П
	Lesterdis 20 %	1
	Lesterdis 20 % New Rogers. all iron	1
	Bracket Saw Blades.	ı
	Griffith's patent # gross 750	1
	BracketsH. b. & M. Flower Pot reduced list-	1
	dis soft to \$	3
	Decement Chair to M & D nowling die	п
٤.	Store Sheif	1
-	Bracket Saw Bindes. Griffith's patent. Brackets.—H. E. & M. Flower Pot reduced list— Gross 750 Bronsed Sheir, M. B. & D newlist	1
-	Store Shelf. dis 40210 S Bronze hardware. dis 40210 S Bronze hardware.	1
-	Store Sheif. dis 40x10 % Bronze hardware.— 40% to 8to 1 % Butts.—Union Fast Joint. 40% to 8to 2 % Butts.—Union Fast	
-	Bronze Hardware. Butta. Union Fast John	
	Bronze isari, s. 5. e o newire dis cosio 5 Bronze isarigue dis cosio 5 Butta-Unio frant John 408108 408108 108108 108 108 108 108 108 108 108	
-	Bronze Hardware. Butta. Union Fast John	
-	Bronze i saret, as. 5. a brewiss dis occio se Store Sheif. dis 40kro S Bronze i saretware. dis 50krosto S Bronze i saretware. dis 50krosto S Japanned Acorn. dis 50krosto S Silvered dis 50krosto S G Silvered dis 50krosto S G Silvered dis 50krosto S G S Silvered dis 50krosto S G S S Silvered dis 50krosto S G S S S S S S S S S S S S S S S S S	
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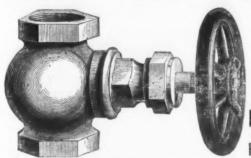
Buck's Chisels.
Clothes Line.—
Galvanized Wire, 100 feet
Uoni Hods.—"Dover."—
Japanned, new list.
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	Dividers.—Cook's. dis 25 5
	Drills.—Morse Bitt Stock
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	American File Co
	Gimlet Bitts. Genuine German, No. 125, 1-32 to 8-32, per dos \$1.ce Pierce's. Combination Class Cutter and Knife Sharp- ener. ### dos \$1.ce
	Grub Hoes.—K. P. & Co.'s No. 2, 11.50 ¥ dos.dla 30 % Hammers.—Maydole's.
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t,	Fisher's Patent.
	Hinges.—Strap and T (new list). dis 50±10€to % Providence Plate.
	Hooks and Staples.—Brewers'new list, dis 70% Horse Naits. No. 0 7 8 9 National Finished
2.1.0	No. 6 21 No. 7, 21 , No. 8, 20 ; No. 9, 10, 10c Cream Freezers, -Packer's, new list dis 40& 05 K nobs, -"Norwalk". New list
8	Lanterns Guarded No. 90.
	# 10 Cut
1 4	Lead.—Sheet
	Mattocks K. P. & Co., Long Cutter, 16.0
100	
	Mattocks.—K. P. & Co., Long Cutter, 16.0 ≥ dox. K. P. & Co., Short Cutter, 15.0 ₹ dox. Mag. 2 dox. Measuring Tapes.—Eddy's. Measuring Tapes.—Eddy's. Measuring Tapes.—Eddy's. Mis 20 Meat Cutters,—Mis Challenge. Mis 20 Male's, (New Hist). Mis 20 Male's, (New Hist). Mis 20 Money Drawers.—Tucker's Alarm. P dos 2.00 Novelty. Money Drawers.—Tucker's Alarm. P dos 2.00 Novelty. Mis 20 Novelty
H	**Andlecks.—W. Wilcox & Co.'s dis 40 \$ **Inper.** Tarred Sheathing \$\psi\$ \$\psi\$, 2\forall color Tarred Eagle Brand \$\psi\$ \$\psi\$, 2\forall color \$\psi\$ \$\psi\$ \$\psi\$, 2\forall color \$\psi\$ \$\psi\$, 2\forall color \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$ \$\psi\$
P	
100	**Radicks.**—W. Wilcox & Co.*s.
P	American Shear Co.'s
F	ullev Blocks dls 40 % umps.—Union Manufacturing Co. iron Clatern
H	sente Diggers.—W. C. & Co, reduced listdus to 5 utileys Acme or Excelsior, 154 in per dez 200 utiley Blocks 213 230 amps.—Union Manufacturing Co. livo Clatern dis to 5 "Pitcher Spout dis 50 5". Pitcher Spout dis 50 5". Copper dis 50 5". di
20 21	adirens.—Commor * 2 0460 Laundry. * 2 0565 Enterprise. * Potts''. * 018 3 4 7 ash Locks.—King & Hutoninson's, new list, dis 3 4
2 4 4	
1	W. M. & C., Common Tooth, No. 1
1	nah Weights.—Patent Eye. **P 1146 a.ws.—Hand Saws, Diaston's
Bo	ales.—Fairbanks
SCAP.	Alex.
のおおりと	ears American Shear Co., new list. dis 70 %
E E BA	
TaP 8	Color Colo
T.F	Olis a
Vie H P	iaces
BI	lake's dis 30 & 10 %
Wi	re Cloth. "Chinton" From 4.15 re Fence, with Faten, Painted. Faten, Galvanised.
W Y	rard Mig. Codisco s
WY	ingers. 18 79 \$ illeral, No. 144. \$ \$ \$ illeral, No. 2. \$ \$ \$ velty, No. 2. \$ \$ \$ velty, No. 4. \$ \$ \$ No. 5. \$ \$ \$ No. 6. \$ \$ \$ No. 6. \$ \$ \$ No. 7 \$ \$ \$ No. 8 \$ \$ \$ No. 9 \$ \$ No. 9 \$ \$ \$ No. 9 \$ \$ \$ No. 9 \$ \$ No. 9 \$ \$ \$ No. 9 \$ \$ \$ \$ No. 9 \$ \$ \$ \$ \$ No. 9 \$ \$ \$ \$ No. 9 \$ \$ \$ \$ \$ \$ \$ No. 9 \$ \$ \$ \$ \$ \$ \$ No. 9 \$ \$ \$ \$ \$ \$ \$ \$ No. 9 \$ \$ \$ \$ \$ \$ \$ \$ No. 9 \$ \$ \$ \$ \$ \$ \$ \$ \$
No Eu	rard Agl 'ingers. hiversal, No. 1½
Vit	c. 1700 Frame No. 29 4 dos 42 co hington, Cooley & Co.—Hoes, Rakes, Forka &o 5 Special rates for Expors.

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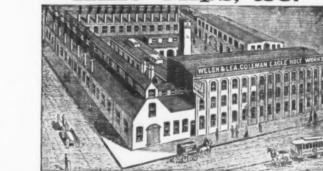
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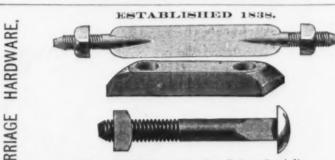
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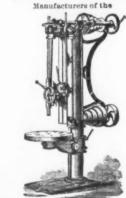
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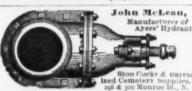
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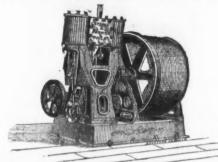


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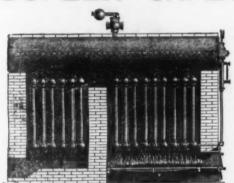
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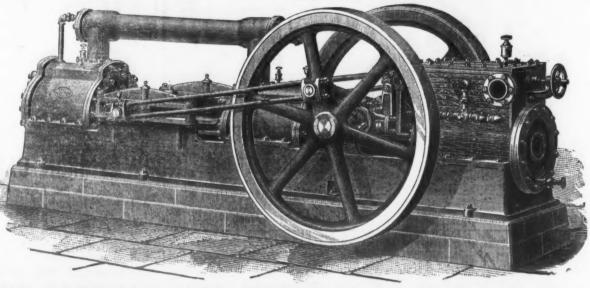
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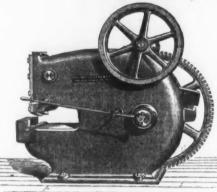


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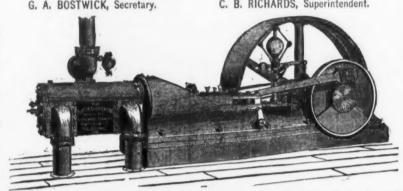
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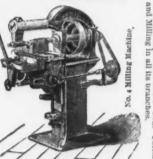
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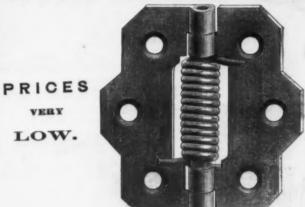
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